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ABSTRACT

This book of supplemental exercises is one of a series of books designed to provide educational materials in addition to the instructional texts in the Adult Learning Skills Program. Exercises in this intermediate level book are for the mathematics subject area. Course numbers and exercise topics are: 501 (estimations, decimals and money, decimal vocabulary, place value, reading and writing decimals), 502 (comparing decimals, rounding decimals, adding and subtracting decimals, decimal word problems), 503 (multiplication of decimals, decimal word problems), 601 (division of decimals, decimal word problems), 602 (rounding quotients, estimation, Roman numerals), 603 (prime numbers, number patterns, decimal word problems), 701 (recognizing fractions, fractional vocabulary, fractions and mixed numbers, fractional equivalencies, comparing fractions, adding and subtracting like fractions, mixed numbers and improper fractions), 702 (adding and subtracting like mixed numbers, common denominators, adding and subtracting unlike fractions, adding and subtracting unlike mixed numbers, fractional word problems), 703 (multiplication of fractions, fractional word problems), 801 (division of fractions, fractional word problems), 802 (comparing decimal and fractional values, adding and subtracting decimals and fractions, fractional and decimal word problems), and 803 (multiplying decimals and fractions, dividing decimals and fractions). Reviews are provided for courses 501-603 and 701-803. (YLB)

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MATHEMATICS

Intermediate Supplemental Exercises

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Courses 501 — 803

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Adult Learning Skills Program

City Colleges of Chicago

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ADULT LEARNING SKILLS PROGRAM

Supplemental Exercises

in

MATHEMATICS

Courses 501-803

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The exercises in this book and in this series have been designed to provide educational materials in additon to instructional texts. The exercises in the Intermediate Level books were developed in the subject areas by the following:

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501 Exercise 1

OBJECTIVE: To solve estimation word problems involving the four basic operations

EXAMPLE: In 1968 at Howard University there were 568 seniors, 473 juniors, 552 sophomores, and 631 freshmen. What was the enrollment? (round answer to nearest tens)

570	568
470	473
550	552
630	631
2,220 estimated enrollment	2,224 actual enrollment

PART I

DIRECTIONS: Solve the following estimation word problems.

1. At a video store, a shelf broke holding a $362 television and a $439 television. How much money did the store lose in the accident? (round to nearest hundred)

   estimated cost _____ actual cost _____

2. The library has 5,454 books. 1,758 books have been checked out. How many books are left? (round to nearest hundred)

   estimated books _____ actual books _____

3. A factory makes 86,260 beds in 10 days. What is the average number of beds per day? (round to nearest hundred)

   estimated beds _____ actual beds _____

4. There are 12 eggs in a carton. How many eggs are there in 43 cartons? (round to nearest ten)

   estimated eggs _____ actual eggs _____

5. A school year has 286 days. 143 days have passed. How many are left? (round to nearest ten)

   estimated days _____ actual days _____

6. Mack's ice cream shop had 92 flavors in barrels. A barrel holds 30 liters. How many liters are in all the barrels? (round to nearest ten)

   estimated liters _____ actual liters _____

7. There were 185 people on the jet that flew to Hawaii. 166 more people flew there the same day. How many people flew to Hawaii that day? (round to nearest hundred)

   estimated people _____ actual people _____

8. State Street has 530 street lights. Each block has 10 lights. How many blocks are there? (round to nearest hundred)

   estimated blocks _____ actual blocks _____

9. The three Sanchez brothers decided to buy a car they could share. If the car cost $8,898, what portion did each pay? (round to nearest thousand)

   estimated share _____ actual share _____

10. Each package of art paper has 21 sheets. How many sheets of art paper are in 36 packages? (round to nearest ten)

    estimated sheets _____ actual sheets _____

PART II

DIRECTIONS: Read the story below. Then do the word problems which follow.

Shopping at the Corner Store

Jack Robb, a junior college student and part time salesman, stopped in the corner grocery to pick up some things for his wife. He had a twenty dollar bill and some change. He hoped the twenty would be enough. As he walked through the store putting items in his basket, he estimated the cost in his head so he would not overspend. An 8 ounce package of bologna was 89¢; a pound of smoked sausage was $1.89. Three pounds of ground beef cost $1.39 a pound, and a 5 pound roasting chicken cost 89¢ a pound. Jack swung his basket to the next aisle confident that he still had money left to spend. You see, he always rounded the price of each item to the nearest dollar and then kept adding the dollars up in his head. For instance, he counted the package of bologna as $1.00 instead of 89¢.

In the next aisle, Jack picked up a half gallon of ice cream for $2.39. A package of frozen waffles was 82¢, and a carton of orange juice was $1.19. Jack allowed $2.00 for tax and then figured out that he still had more money to spend. He bought 4 ears of corn for $1.49 and a package of margarine for 79¢. At that point, he went to the checkout counter. The cashier rang up his order. He gave her his twenty dollar bill and received his change. Jack picked up his bag and left the store to head home.

DIRECTIONS: Work each of the following problems by referring to the story you just read. Round off numbers where necessary.

1. Jack rounded the cost of ground beef per pound to the nearest dollar. How much did he estimate three pounds cost?

2. Jack rounded the cost of roasting chicken per pound to the nearest dollar; how much did he estimate a 5 pound chicken costs?

3. In the first aisle Jack put an 8 ounce package of bologna, a pound of smoked sausage, 3 pounds of ground beef and a 5 pound roasting chicken into his basket. He knew from his estimating system that he still had money left. How much had he estimated that he spent?

4. In the next aisle Jack put a half gallon of ice cream, a package of frozen waffles and a carton of orange juice into his basket. If he rounded the prices of these items to the nearest dollar, how much did he estimate all three items cost?

5. Add the estimated cost of the items picked up in the first aisle (bologna, sausage, ground beef, chicken) to the estimated cost of the items picked up in the second aisle (ice cream, waffles, orange juice). What was the estimated

cost of the groceries so far?

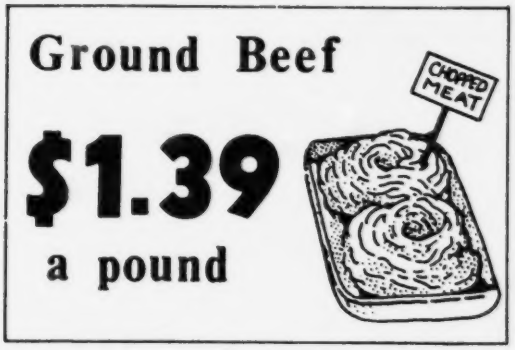
6. Was Jack right at the end of the second aisle that he still could buy more groceries?

7. Jack bought 4 ears of corn and a package of margarine. What did he estimate the total cost of these items to be?

8. What was the total estimated cost of all the items Jack put in his basket?

9. How much change could Jack have estimated that he would receive from his $20.00?

10. The actual cost of the ground beef was $4.17, and the actual cost of the chicken was $4.45. What was the actual total cost of all Jack's groceries including the tax of $1.27?



OBJECTIVE: To understand the meaning of decimals as they relate to money

EXAMPLE: One dollar and twenty-seven cents = $1.27

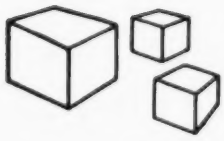
DIRECTIONS: Express each of the following with numerals and symbols for money.

1. Five dollars and eight cents _____
2. Ninety-three cents _____
3. Three hundred seven dollars and fifty cents _____
4. One thousand six hundred dollars _____
5. Seven dollars and one cent _____
6. Six million one hundred thousand eighty-two dollars and forty-seven cents _____
7. Three cents _____
8. Eighty-two dollars and sixty cents _____
9. One dollar and one cent _____
10. Four thousand six hundred fifty-two dollars and ninety-three cents _____
11. Twenty-five dollars and seventy-six cents _____
12. Sixty-four cents _____
13. Nine hundred forty-three thousand four hundred six dollars _____
14. Ninety-nine cents _____
15. One dollar _____
16. One hundred forty-one dollars and six cents _____
17. Three thousand eighty-nine dollars and thirty-seven cents _____
18. One thousand eleven dollars and sixteen cents _____
19. Ten dollars _____
20. Eighty-eight dollars and twenty cents _____

OBJECTIVE: To recognize and define vocabulary and symbols related to decimals

DIRECTIONS: Match the word or symbol in Column A to the meaning in Column B. Place the letter in the space provided. An example has been done for you.

	Column A	Column B
d 1.	tenths	a. six decimal places
_____ 2.	decimals	b. approximately equal to
_____ 3.	hundredths	c. =
_____ 4.	equal	d. one decimal place
_____ 5.	less than	e. >
_____ 6.	thousandths	f. when the digit to the right is 5 or more; increase digit to left by one
_____ 7.	ten-thousandths	
_____ 8.	decimal point	g. <
_____ 9.	greater than	h. three decimal places
_____ 10.	hundred-thousandths	i. two decimal places
_____ 11.	mixed decimal	j. the position of a digit in a number which gives its value
_____ 12.	rounding	k. five decimal places
_____ 13.	millionths	l. four decimal places
_____ 14.	estimation	m. numbers based on powers of ten which stand for parts of wholes
_____ 15.	place value	n. a whole number and a decimal number
		o. read as <u>and</u>



OBJECTIVE: To recognize decimal place value from tenths through millionths

EXAMPLE: 20.0<u>3</u> = three hundredths 20.<u>0</u>3 = no tenths

DIRECTIONS: Write the place value for the underlined digit.

1. 12.<u>2</u>3 _____
2. .<u>4</u>6 _____
3. .1<u>5</u>5 _____
4. .<u>5</u>2 _____
5. .00<u>7</u> _____
6. .00000<u>6</u> _____
7. .5<u>6</u>01 _____
8. 10.2<u>1</u> _____
9. .98075<u>9</u> _____
10. 36.<u>8</u>1 _____

DIRECTIONS: If the statement is true, write a (T) in the blank before the statement. If the statement is false, write (F) in the blank.

EXAMPLE: F In the number, .0<u>3</u>1, the underlined 3 is in the tenths place.

_____ 1. In the number 29.37<u>6</u>, the underlined six is in the hundredths place.

_____ 2. In the number .367<u>2</u>, the underlined two is in the ten-thousandths place.

_____ 3. In the number .00<u>0</u>4, the underlined zero holds the hundredths place.

_____ 4. In the number 6.<u>6</u>, the underlined six is in the tenths place.

_____ 5. In the number 6,796.00262<u>5</u>, the underlined five is in the hundred-thousandths place.

_____ 6. In the number 50.002367, the underlined seven is in the millionths place.

_____ 7. In the number .0<u>1</u>, the underlined one is in the tenths place.

_____ 8. In the number .00007<u>5</u>, the fourth zero holds the hundred-thousandths place.

_____ 9. In the number 3.<u>0</u>5, the zero holds the tenths place.

_____ 10. In the number 52,603.0<u>3</u>6, the underlined three holds the thousandths place.

_____ 11. In the number 34,820.<u>4</u>59, the underlined four is in the thousandths place.

_____ 12. In the number 34,820.<u>4</u>59, the underlined four is in the hundredths place.

_____ 13. In the number 24,820.46<u>9</u>, the underlined nine is in the thousandths place.

_____ 14. In the number 2,097,429.0640<u>3</u>, the underlined three is in the millionths place.

_____ 15. In the number 56.8309<u>2</u>, the underlined two holds the hundred-thousandths place.

OBJECTIVE: To recognize decimal place value from tenths through millionths

DIRECTIONS: As you read the decimals in Column A, match them with the written decimals from Column B. Place the letter in the space provided. An example is done for you.

	COLUMN A	COLUMN B
f Ex.	.6	a. Four and nine tenths
____ 1.	5.3	b. Thirty-seven and six hundredths
____ 2.	37.06	c. Nine hundred seventy-eight and thirty-four hundredths
____ 3.	.0031	d. Five and four hundred twelve thousandths
____ 4.	10,000.0010	e. Thirty-six and fifty-eight hundredths
____ 5.	2,000.01	f. Six tenths
____ 6.	36.58	g. Nine thousand seven hundred eighty-six ten-thousandths
____ 7.	.2	h. Two thousand and one hundredth
____ 8.	978.34	i. Thirty-six and two hundred twenty-three thousandths
____ 9.	5.412	j. Four thousand three hundred twenty-one and thirty thousandths
____10.	.9786	k. Five and three tenths
____11.	.74	l. Two tenths
____12.	4.9	m. Thirty-one ten-thousandths
____13.	.022	n. Nineteen millionths
____14.	.000019	o. Eighty hundredths
____15.	36.223	p. Forty-two and fifty-two thousandths
____16.	4.07	q. Ten thousand and ten ten-thousandths
____17.	42.052	r. Three and thirty-three hundredths
____18.	3.33	s. Four and seven hundredths
____19.	.80	t. Twenty-two thousandths
____20.	4,321.030	u. Seventy-four hundredths

OBJECTIVE: To read decimals

EXAMPLE: .27

b

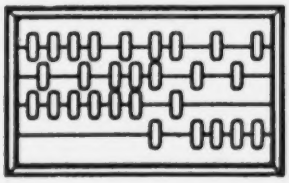
a. twenty-seven thousandths
b. twenty-seven hundredths
c. twenty-seven tenths

DIRECTIONS: Match the decimal on the left with the correct words on the right. Place your answer in the blank that has been provided for you.

1. .232 _____
   a. two hundred thirty-two tenths
   b. two hundred thirty-two thousandths
   c. two hundred thirty-two hundredths

2. .16 _____
   a. sixteen thousandths
   b. sixteen hundredths
   c. sixteen tenths

3. .55 _____
   a. fifty-five hundredths
   b. fifty-five thousandths
   c. fifty-five tenths



4. .0097 _____
   a. ninety-seven hundredths
   b. ninety-seven thousandths
   c. ninety-seven ten-thousandths

5. .0300 _____
   a. three hundred ten-thousandths
   b. hundred-thousandths
   c. thirty ten-thousandths

6. .000003 _____
   a. three ten-thousandths
   b. three hundredths
   c. three millionths

7. .00025 _____
   a. twenty-five thousandths
   b. twenty-five millionths
   c. twenty-five hundred-thousandths

8. 31.001 _____
   a. thirty-one and one thousandth
   b. thirty-one and one ten-thousandth
   c. thirty-one and one hundredth

9. 9.32 _____
   a. nine and thirty-two tenths
   b. nine and thirty-two hundredths
   c. nine and thirty-two thousandths

10. 780.4 _____
   a. seven hundred eighty and four tenths
   b. seven hundred eight and four tenths
   c. seven hundred eighty and four hundredths

OBJECTIVE: To write decimal place value from tenths through millionths

DIRECTIONS: Write the following in decimal form.

EXAMPLE: Sixteen and fifty-nine ten-thousandths = 16.0059

1.	ten thousandths	1. _____
2.	fourteen and two hundred ten-thousandths	2. _____
3.	seven and two tenths	3. _____
4.	one hundred sixty and five tenths	4. _____
5.	three thousandths	5. _____
6.	ten hundred thirty-two ten-thousandths	6. _____
7.	eighty-seven thousandths	7. _____
8.	nine hundred ninety-nine and nine tenths	8. _____
9.	twelve ten-thousandths	9. _____
10.	fifty and three hundred eleven thousandths	10. _____
11.	forty-six and ten thousandths	11. _____
12.	five thousand four hundred thirty-two and one tenth	12. _____
13.	one million and nineteen millionths	13. _____
14.	three hundred thousand and three hundred eighteen hundred-thousandths	14. _____
15.	twenty millionths	15. _____
16.	one hundred and one hundred-thousandth	16. _____
17.	three tenths	17. _____
18.	two hundred eight millionths	18. _____
19.	twenty-five and sixteen thousandths	19. _____
20.	seven and four tenths	20. _____

502 Exercise 1

OBJECTIVE: To compare and order decimals as less than, greater than or equal to

EXAMPLE: Which decimal is greater .6 or .09? Supply zeros to make the place value the same (.60 and .09). Sixty hundredths is greater than nine hundredths; therefore, .6 is greater than .09.

DIRECTIONS: Draw a circle around the greater value. If they are equal, draw a line under both numbers.

1. .5 or .052
2. .356 or .3561
3. .82 or .877
4. 7.603 or 7.6035
5. .500 or .5
6. .1 or .01
7. .0053 or .004
8. .7 or .0899
9. 9.0769 or 9.07695
10. .33 or .3301
11. .1705 or .17049
12. .0008 or .00080
13. .62 or .062
14. .45 or .4532
15. .1674 or .2
16. .383421 or .39
17. .65824 or .658239
18. 6.66 or 6.0066
19. .8421 or .842001
20. .8 or .88

EXAMPLE: Arrange a series of decimals in order such as .463, .4052, .47 and .458:

1. put the decimals in a straight line:
   .463
   .4052
   .47
   .458
2. add zeros where necessary:
   .4630
   .4052
   .4700
   .4580
3. arrange the "new" numbers from smallest to largest:
   .4052
   .4580
   .4630
   .4700
4. then convert the numbers back to their original form:
   .4052 = .4052
   .4580 = .458
   .4630 = .463
   .4700 = .47

The decimals going from smallest to largest are: .4052, .458, .463 and .47

DIRECTIONS: Arrange the following decimals in order from smallest on the left to largest on the right: (use another sheet of paper)

1. .04 .440 .0004 .404
2. .66 .56 .643. .6
3. .463 .4280 .485 .4059
4. .2 .251 .3215 .36719
5. .002 .2300 .203 .20023
6. .9800 .97800 .9489 .4598
7. .1234 .4321 .1023 .44021
8. .23600 .231 .2305 .23097
9. .4545 .0445 .4004 .450045
10. .760 .7065 .7076 .7006

OBJECTIVE: To round decimals from tenths to hundred-thousandths

EXAMPLE: Round .652 to the nearest tenth. The 6 is in the tenths place. If the next number to the right of the tenths place is 5 or more, add one to the tenths and drop the remaining numerals. If the next numeral to the right of the tenths place is 4 or less, leave the number as it is and drop the remaining numerals. .652 = .7 .634 = .6 and .43 = .4 .497 = .5

DIRECTIONS: Round each number to the nearest unit indicated.

DECIMAL	TENTHS	HUNDREDTHS	THOUSANDTHS	TEN-THOUSANDTHS	HUNDRED-THOUSANDTHS
Ex).671636	.7	.67	.672	.6716	.67164
1).317681					
2).461706					
3).076495					
4).205316					
5).167534					
6).006280					
7).089051					
8).633214					
9).586433					
10).325465					
11).008991					
12).973654					
13).163259					
14).100007					
15).260771					
16).455423					
17).678954					
18).123456					
19).876534					
20).918273					

OBJECTIVE: To add decimals

EXAMPLE 1: Add 27.3 + 186.00 + 5.678

First, write zeros to hold place value:

```
  27.300
 186.000
+  5.678
```

Second, add and bring down the decimal point:

```
  27.300
 186.000
+  5.678
 -------
 218.978
```

EXAMPLE 2: The distance from Mrs. Lee's job to the grocery store is 1.8 miles. The distance from the grocery store to Mrs. Lee's home is .6 miles. What is the distance from Mrs. Lee's job to her home by way of the grocery store?

```
  1.8 miles
+  .6 miles
 ---------
  2.4 miles
```

DIRECTIONS: Add the following decimals:

1) .9 + .058 + .47

2) 123. + 9.01 + 6.6

3) 9.012 + .72 + 17.

4) .948 + .6 + 37.

5) 4.654 + .01 + 142.9

6) 11.21 + 242. + .0081

7) 6.6 + 17. + 5.18

8) 5. + 23.516 + 2.03

9) 10.03 + 36. + 30.263

10) .0032 + 6.203 + 4.1

11) 83.005 + .28 + 8.9

12) 6. + .03 + 31.107

13) 2.46 + .003 + 16.

14) 9.04 + 4.5 + 482.

15) .0856 + 6.203 + 4.1

16) .8 + .026 + .34

17) .1 + 1. + .001

18) .4 + .2 + 42.

19) 2.8 + 18. + .48

20) 9.003 + .34 + .7

21) 4.6745 + 23.98 + .567 + 3.092 + .78

22) 4.720 + .8922 + 473.072 + .681 + 67.3012

23) .908 + 7.52355 + .0083 + 15.963 + .673298

24) 23.0079 + 4.00009 + .975 + 6308.74502 + 75.754

25) 9.6290 + .07000 + 9000.80080 + .9762 + .009

OBJECTIVE: To subtract decimals

EXAMPLE 1: Subtract 82 - 36.98

First, write zeros to hold place value:

$$\begin{array}{r} 82.00 \\ -\ 36.98 \\ \hline \end{array}$$

Second, subtract and bring down the decimal point:

$$\begin{array}{r} 82.00 \\ -36.98 \\ \hline 45.02 \end{array}$$

EXAMPLE 2: Janice drives 26.8 miles to her health club. After driving 10.6 miles, she stops to gas up. How much farther does she have to drive to get to the health club?

Subtract and bring down the decimal point.

$$\begin{array}{r} 26.8 \text{ miles} \\ -\ 10.6 \text{ miles} \\ \hline 16.2 \text{ miles} \end{array}$$

DIRECTIONS: Subtract the following decimals.

(1)	$\begin{array}{r} 1. \\ -\ .059 \\ \hline \end{array}$	(2)	$\begin{array}{r} \$8.00 \\ -\ 7.69 \\ \hline \end{array}$	(3)	$\begin{array}{r} 2.3 \\ -\ .1975 \\ \hline \end{array}$	(4)	$\begin{array}{r} \$2.70 \\ -\ .53 \\ \hline \end{array}$
(5)	$\begin{array}{r} .76 \\ -\ .3970 \\ \hline \end{array}$	(6)	$\begin{array}{r} 50.2 \\ -\ 5.02 \\ \hline \end{array}$	(7)	$\begin{array}{r} 5.90 \\ -\ .7 \\ \hline \end{array}$	(8)	$\begin{array}{r} .587 \\ -\ .012 \\ \hline \end{array}$
(9)	$\begin{array}{r} 12.332 \\ -\ .872 \\ \hline \end{array}$	(10)	$\begin{array}{r} 6.1274 \\ -\ 3.0895 \\ \hline \end{array}$	(11)	$\begin{array}{r} 99.9 \\ -\ .699 \\ \hline \end{array}$	(12)	$\begin{array}{r} .06 \\ -\ .043 \\ \hline \end{array}$
(13)	$\begin{array}{r} .05 \\ -\ .003 \\ \hline \end{array}$	(14)	$\begin{array}{r} 15. \\ -\ 6.391 \\ \hline \end{array}$	(15)	$\begin{array}{r} .46 \\ -\ .4329 \\ \hline \end{array}$	(16)	$\begin{array}{r} \$10. \\ -\ .98 \\ \hline \end{array}$
(17)	$\begin{array}{r} 8.8 \\ -\ .542 \\ \hline \end{array}$	(18)	$\begin{array}{r} 35.4 \\ -\ 29.8794 \\ \hline \end{array}$	(19)	$\begin{array}{r} 3.754 \\ -\ 2.681 \\ \hline \end{array}$	(20)	$\begin{array}{r} .30 \\ -\ .2987 \\ \hline \end{array}$

OBJECTIVE: To add and subtract decimals

EXAMPLE 1: Add 3.58 + .003 + 20.

Line up the decimal points, then add as usual:

$$\begin{array}{r} 3.58 \\ .003 \\ +\ 20. \\ \hline 23.583 \end{array}$$

EXAMPLE 2: Subtract 5.9 - .089.

Line up the decimal points; add zeros where necessary; subtract as usual:

$$\begin{array}{r} 5.900 \\ -\ .089 \\ \hline 5.811 \end{array}$$

Bernard is taking a class in computer science. He worked on the computer 3.5 hours Monday, 6.25 hours Tuesday, 1.75 hours Wednesday, 2 hours Thursday, and 2.25 hours on Friday. How many hours did Bernard study this week?

Answer _____

DIRECTIONS: Add and subtract the following. Show your work on a separate sheet of paper.

1. 10.6 + 76.36 + .563 = _____
2. 53.07 - 27.9 = _____
3. $105.03 - 78.22 = _____
4. 31.54 - .38 = _____
5. 27.72 - .072 = _____
6. 17.36 + .35 + 4.68 = _____
7. 5.67 - .9 = _____
8. $5.05 - .55 = _____
9. 233.06 + 43 + 16.5 = _____
10. 5 - .39 = _____
11. .1206 + .009 = _____
12. .12077 + 9.29 = _____
13. 8.9 - 3.63 = _____
14. .56 - .07 = _____
15. $86.32 + $ .76 + $1.32 = _____
16. $336.89 + $66.52 = _____
17. 59 + .8 + 276.6 = _____
18. .256 + .8 + 276.6 + 45.3 = _____
19. $30.75 - $4.11 = _____
20. 245.6 + 3.07 + .604 = _____
21. 21 - .007 _____
22. 703.2 + 33.58 + 15.7620 = _____
23. .63 - .406 = _____
24. 186.9 + 89 + 51.8 = _____
25. .5 - .406 = _____

OBJECTIVE: To solve one-step decimal word problems involving addition and subtraction

---

EXAMPLE: Mr. Bradford's income is $235.67 a week. He spends $89.00 a week for gas and food. How much does he have left after paying for gas and food?

$$\begin{array}{r} \$235.67 \\ -\ 89.00 \\ \hline \$146.67 \end{array}$$

Answer $146.67

PART I

DIRECTIONS: Solve the following problems on another sheet of paper.

1. Sandy bought 3.2 pounds of chicken, 5 pounds of ground beef, 2.7 pounds of bacon, and 1.8 pounds of pork sausage. How much did all of her meat weigh?

2. Donna is 1.57 meters tall and her sister is .93 meters tall. How much taller is Donna than her sister?

3. Mr. Jones deposited $536.08 in his checking account and then had to write a check for $396.34. What is his balance?

4. The express train takes 11.9 minutes from 47th Street to the Madison el stop. The local train takes 21.8 minutes. How much faster is the express?

5. Cheryl bought an eight oz. jar of Sanka coffee for $5.19. She had a $ .40 coupon. How much did Cheryl pay for the jar of coffee?

6. José mailed two packages that weighed 5.81 kilograms and 8.3 kilograms. What was the total weight of both packages?

7. George jogged 6.2 miles on Monday, 6.01 on Tuesday, 4.52 on Wednesday, 5.1 on Thursday, and 5.76 on Friday. What was his weekly total?

8. The price of a gallon of unleaded gasoline went from $1.39 to $1.26. By how much did the price of the gasoline decrease?

9. Dorothy made $110.00 selling candy. She had to pay the wholesaler $86.00 for the candy. How much profit did she make on the candy?

10. A stereo regularly priced for $595.95 was on sale for $469.98. How much would a person save if he bought the stereo at the sale price?

PART II

DIRECTIONS: The following bank book statement shows the amount of each withdrawal, deposit or added interest. Answer the questions that follow by using the figures given and enter your answers on the appropriate lines on the statement. An example has been done for you.

IN ACCT. WITH		William Washington		No. 92525010	
	DATE	WITHDRAWAL	DEPOSIT	INTEREST	BALANCE
					$575.37
Ex.	14OCT82	$35.00			$540.37
1	6NOV82		$126.25		
2	13JAN83			$12.98	
3	13JAN83		$263.00		
4	15JAN83	$396.75			
5	4FEB83		$679.00		
6	11FEB83	$50.00			
7	25FEB83		$175.87		
8	2MAR83	$1000.00			
9	4MAR83			$7.81	
10	11MAR83		$397.53		

EXAMPLE: On Oct. 14, 1982, William withdrew $35.00 for a pair of shoes. What was his new balance?

1. William Washington deposited $126.25 on Nov. 6, 1982. What was his new balance?

2. William received $12.98 interest on his account on Jan, 13, 1983. Enter his new balance for this transaction.

3. He deposited $263.00 on the same day. How much does he now have in his savings?

4. On Jan 15th, William made a withdrawal for the amount of $396.75. How much did he have left?

5. William deposited his entire tax return of $679.00 on Feb 4, 1982. What was his balance?

6. On Feb. 11th he decided to buy a Valentine's gift for his friend. He made a withdrawal of $50.00. What was his remaining balance?

7. Mr. Washington's next deposit was $175.87. How much did he now have in his savings?

8. William withdrew $1000.00 for a down payment on a new car on March 2nd. How much did he have left?

9. On March 4, 1983, William received $7.81 interest on his account. What was his balance after the interest was added?

10. On March 11th he made a deposit of $397.53. What was his new balance?

PART III:

DIRECTIONS: Using the bank statement solve the following problems.

1. What was the total amount of William's withdrawals?

2. What was the total amount of his deposits?

3. How much interest did he receive during this period?

4. In January were William's withdrawals greater than his deposits? If so, by how much?

5. Did he have more or less money saved at the end of his last transaction?

OBJECTIVE: To count places in multiplication of decimals

DIRECTIONS: In the following problems with the products given, insert the decimal point in the answer.

EXAMPLES:				
1 2 3	(no places)	1.2 3	(2 places)
x 1 2.3	(1 place)	x.1 2 3	(3 places)
1 5 1 2.9	(1 place)	.1 5 1 2 9	(5 places)
1 2.3	(1 place)	.1 2 3	(3 places)
x 1 2.3	(1 place)	x .1 2 3	(3 places)
1 5 1.2 9	(2 places)	.0 1 5 1 2 9	(6 places, zero added)

(1) 16.2 × .058 = 9396

(2) 1.62 × .058 = 9396

(3) 1.62 × 5.8 = 9396

(4) 16.2 × 58 = 9396

(5) .003 × .406 = 1218

(6) .003 × 4.06 = 1218

(7) .003 × 40.6 = 1218

(8) .003 × 406 = 1218

(9) .527 × 102 = 53754

(10) 5.27 × 10.2 = 53754

(11) .527 × 1.02 = 53754

(12) 527 × .102 = 53754

(13) .812 × 923 = 749476

(14) 8.12 × 92.3 = 749476

(15) 81.2 × 9.23 = 749476

(16) 812 × .923 = 749476

(17) .989 × .001 = 989

(18) 9.89 × .001 = 989

(19) 9.89 × 0.01 = 989

(20) 98.9 × 0.01 = 989

DIRECTIONS: Place decimal points where appropriate.

1. The product of .561 times .3 is 1683
2. The product of .93 times 1.1 is 1023
3. The product of 15.6 times 2.3 is 3588
4. The product of 44.45 times .8 is 35560
5. The product of .237 times 21 is 4977

OBJECTIVE: To multiply a whole number by a decimal

EXAMPLE: Eduardo Sanchez works in a tree nursery. He and his young assistant plant 500 trees each month. How many trees could they plant in 3.5 months?

```
  5 0 0
x   3.5
-------
  2 5 0 0
1 5 0 0
-------
1 7 5 0.0 trees
```

DIRECTIONS: Multiply the following.

(1) 7 5 1 x .3

(2) 2 8 9 x .5

(3) 2 x .3

(4) 1 6 x .2

(5) 9 2 0 x 3.6

(6) 5 6 4 x 1.1

(7) 7 9 6 x .4 2

(8) 6 3 2 x .7

(9) 5 x .6 =

(10) 332 x 4.6 =

(11) 901 x .006 =

(12) 417 x .6 =

(13) 92 x .13 =

(14) 389 x .29 =

(15) 1368 x .201 =

(16) 4705 x .005 =

(17) 68 x .326 =

(18) 756 x 1.69 =

(19) 424 x 38.6 =

(20) 9349 x 76.71=

OBJECTIVE: To multiply a decimal by a whole number

EXAMPLE:

$$\begin{array}{r} \$3.98 \\ \times \quad 4 \\ \hline \$15.92 \end{array}$$

DIRECTIONS: Multiply the following.

1. $\begin{array}{r} .751 \\ \times \quad 3 \\ \hline \end{array}$	2. $\begin{array}{r} 28.9 \\ \times \quad 5 \\ \hline \end{array}$	3. $\begin{array}{r} .2 \\ \times \quad 3 \\ \hline \end{array}$	4. $\begin{array}{r} .006 \\ \times \quad 2 \\ \hline \end{array}$
5. $\begin{array}{r} .00092 \\ \times \quad 16 \\ \hline \end{array}$	6. $\begin{array}{r} 97.6 \\ \times \quad 12 \\ \hline \end{array}$	7. $\begin{array}{r} .246 \\ \times \quad 25 \\ \hline \end{array}$	8. $\begin{array}{r} 514.6 \\ \times \quad 33 \\ \hline \end{array}$
9. $\begin{array}{r} .544 \\ \times \quad 103 \\ \hline \end{array}$	10. $\begin{array}{r} \$12.50 \\ \times \quad 167 \\ \hline \end{array}$	11. $\begin{array}{r} 2.4 \\ \times \quad 37 \\ \hline \end{array}$	12. $\begin{array}{r} \$376.49 \\ \times \quad 59 \\ \hline \end{array}$
13. $\begin{array}{r} 5.027 \\ \times \quad 309 \\ \hline \end{array}$	14. $\begin{array}{r} \$.96 \\ \times \quad 5 \\ \hline \end{array}$	15. $\begin{array}{r} 740.6 \\ \times \quad 11 \\ \hline \end{array}$	16. $\begin{array}{r} .00038 \\ \times \quad 12 \\ \hline \end{array}$
17. $\begin{array}{r} \$6.72 \\ \times \quad 13 \\ \hline \end{array}$	18. $\begin{array}{r} 4.68 \\ \times \quad 45 \\ \hline \end{array}$	19. $\begin{array}{r} \$.84 \\ \times \quad 63 \\ \hline \end{array}$	20. $\begin{array}{r} .1368 \\ \times \quad 201 \\ \hline \end{array}$

OBJECTIVE: To multiply a decimal by a power of 10

EXAMPLE: (1) To multiply a decimal by 10, move the decimal point one place to the right:

.6 3 x 10 = .6 3 = 6.3

(2) To multiply a decimal by 100, move the decimal point two places to the right:

5.6 x 100 = 5.60 = 560.

(3) To multiply a decimal by 1000, move the decimal point three places to the right:

.5 6 0 3 x 1000 = .5 6 0 3 = 560.3

DIRECTIONS: Write the answers to the following.

1) 10 x .9 = _____ 2) 8.17 x 10 = _____ 3) 3.5 x 10 = _____

4) .555 x 10 = _____ 5) .79 x 10 = _____ 6) 94.3 x 10 = _____

7) .07 x 10 = _____ 8) 10 x 4.6 = _____ 9) 100 x .79 = _____

10) 3.45 x 100 = _____ 11) .182 x 100 = _____ 12) 3.5 x 100 = _____

13) .27 x 100 = _____ 14) 100 x .224 = _____ 15) 59.7 x 100 = _____

16) .280 x 100 = _____ 17) 1000 x .4590 = _____ 18) 430.2 x 10 = _____

19) 1000 x 35.49 = _____ 20) .8748 x 1000 = _____ 21) 9.070 x 100 = _____

22) 23.786 x 10 = _____ 23) .9833 x 1000 = _____ 24) 24.5 x 1000 = _____

25) 77.76 x 100 = _____ 26) .45 x 1000 = _____ 27) .5 x 1000 = _____

28) 5.690 x 10 = _____ 29) .983 x 100 = _____ 30) 3245.23 x 10 = _____

OBJECTIVE: To multiply a decimal by a decimal

EXAMPLE: Phil bought 4.5 kilos of fresh shrimp on the beach. If each kilo is equal to 2.2 pounds, how many pounds of shrimp did he get?

$$\begin{array}{r} 4.5 \\ \times\ 2.2 \\ \hline 9\ 0 \\ 9\ 0 \\ \hline 9.9\ 0 \end{array}$$ pounds

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PART I

DIRECTIONS: Find the products of the following.

(1) $17.32 \times .7$

(2) $.0732 \times .56$

(3) $.413 \times 1.2$

(4) $863.3 \times .33$

(5) $1.04 \times .36$

(6) 53.9×7.6

(7) 8.07×4.5

(8) $.4232 \times .3$

(9) $42.32 \times .3$

(10) $18.1 \times .32$

(11) $6.001 \times .005$

(12) $.92 \times .6$

(13) $20.8 \times .015$

(14) $6.9 \times .47$

(15) $31.9 \times .162$

(16) 67.2×1.34

17. Mrs. Kennedy bought 5.4 pounds of beef at the price of $2.70 per pound. What was the total cost?

18. Harry's gas tank holds 16.5 gallons. At $1.22 per gallon, what will it cost to fill his tank?

19. Round steak costs $2.85 per pound. What is the cost of 2.6 pounds of round steak?

20. Samuel bought 5.6 feet of wire. The wire cost $ .35 per foot. What was the total cost of the wire?

PART II

OBJECTIVE: To solve multiplication problems containing decimals and whole numbers

EXAMPLE:

$$\begin{array}{r} 567 \\ \times\ .36 \\ \hline 3402 \\ 1701 \\ \hline 204.12 \end{array}$$

DIRECTIONS: Find the products of the following.

1. $73 \times .5$
2. $804 \times .06$
3. $463 \times .2$
4. 2.67×10
5. $.51 \times .23$
6. $733 \times .05$
7. 3.08×0.6
8. $.579 \times 30.2$
9. 2.67×100
10. 6.66×0.06
11. 4.235×8.2
12. $.2509 \times .520$
13. $.1186 \times 10$
14. 545.3×634
15. $.8434 \times .0003$
16. 900.4×100
17. $.00067 \times .0030$
18. $.9231 \times 1000$
19. $3256 \times .423$
20. 2.020×00.2

OBJECTIVE: To solve one-step decimal word problems involving addition, subtraction and multiplication

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EXAMPLE: Mrs. Jones wants to make a dress. The material she wants costs $3.98 per yard. How much does she have to pay for 4 yards?

$$\begin{array}{r} \$3.98 \\ \times \quad 4 \\ \hline \$15.92 \end{array}$$

DIRECTIONS: Solve the following word problems.

1. Mr. Carlos can get 22.5 miles to the gallon in his car. If he buys 25 gallons of gasoline how far can he go?

2. If Mr. Carlos maintains a speed of 55 miles per hour, how many miles will he travel in 7.5 hours?

3. Donna bought a new car for $8,596.50 and she made a down payment of $1,500.00. What is the remaining balance?

4. Pencils cost 7¢ each at the bookstore. How much would a box of 100 pencils cost?

5. The normal annual snowfall in Denver is 58.12 inches. In New York City, the normal annual snowfall is 39.55 inches. How much greater is the snowfall in Denver than in New York City?

6. Maurice Dailey works 40 hours each week as a Chicago policeman. He earns $13.60 per hour. How much does he earn each week?

7. Sheila was sent to the corner delicatessen to buy sandwiches for 10 people in the office. If the sandwiches cost $1.85 each, how much did all 10 cost?

8. Jeno's bakes 1,000 rolls each day. How many rolls can be baked in 2.5 days?

9. The Thomas family took a trip last summer. The first day they traveled 420.6 miles; the second day, 327.5 miles; the third day, 273.1 miles and the fourth day, 193.8 miles. What was their total mileage for the four days?

10. Inflation rose 0.2 percent in May of 1982. In July of 1982 inflation rose 2.7 percent. What was the difference in the rate of inflation for these two months?

601 Exercise 1

OBJECTIVE: To find quotients for decimals with whole number divisors

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EXAMPLE: Juanita needed to cut 38.4 feet of ribbon into 6 equal pieces.

$38.4 \div 6 =$

$$6\overline{)38.4} = 6.4$$

$$\begin{array}{r} 36 \\ \hline 24 \\ 24 \end{array}$$

Remember, when dividing a whole number into a decimal, bring the decimal point up in the answer directly above its position in the dividend.

DIRECTIONS: Solve each of the following.

1. $5\overline{)43.5}$
2. $7\overline{)5.817}$
3. $3\overline{).147}$
4. $8\overline{)50.08}$
5. $2\overline{)1.518}$
6. $9\overline{)6.75}$
7. $14\overline{)}.196$
8. $65\overline{)286.0}$
9. $15\overline{)}.504$
10. $18\overline{)538.2}$
11. $32\overline{)2.0928}$
12. $84\overline{)70.56}$
13. $11\overline{)510.4}$
14. $4\overline{)1.7032}$
15. $77\overline{)3550.47}$
16. $31\overline{)682.62}$
17. $27\overline{)546.21}$
18. $13\overline{)29.874}$
19. $17\overline{)68.34}$
20. $45\overline{)67.95}$

OBJECTIVE: To divide a decimal by a decimal

EXAMPLE: Divide $.55\overline{)1.760}$

Step 1: Move the decimal point as far to the right as possible in the divisor,

$$.55\overline{)1.760}$$

Step 2: Move the decimal point the same number of places in the dividend,

$$.55\overline{)1.76.0}$$

Step 3: Bring the decimal point straight up in the quotient and divide as usual.

$$\begin{array}{r} 3.2 \\ 55.\overline{)176.0} \\ 165 \\ \hline 110 \\ 110 \\ \hline \end{array}$$

DIRECTIONS: Solve each of the following.

1. $.2\overline{)8.42}$
2. $.6\overline{)36.06}$
3. $.01\overline{).395}$
4. $.07\overline{)3.50}$
5. $.005\overline{).4235}$
6. $.008\overline{)34.480}$
7. $.015\overline{)3.315}$
8. $.056\overline{)17.360}$
9. $.042\overline{)24.402}$
10. $.072\overline{).360}$
11. $1.25\overline{)10.75}$
12. $45.7\overline{)2833.4}$
13. $2.6\overline{).884}$
14. $.30\overline{)3.009}$
15. $.07\overline{).06545}$

OBJECTIVE: To divide a decimal by a decimal annexing zeros where appropriate

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EXAMPLE: Divide $.045\overline{)\,.9}$

Step 1: Move the decimal point in the divisor as far right as possible.

$.045.\overline{)\,.9}$

Step 2: Move the decimal point in the dividend the same number of places by annexing zeros.

$045.\overline{)\,.900\uparrow}$

Step 3: Bring the decimal point straight up.

$045.\overline{)\,900\uparrow}$

Step 4: Divide as usual.

$$045.\overline{)\,900\uparrow00}\quad\begin{array}{r}2.\\ \\ 90\\ \hline 0\end{array}$$

Note: 90 was divided evenly by 45. However, you must add a zero to hold the place (or places) to the left of the decimal point.

$$045.\overline{)\,900.}\quad\begin{array}{r}20.\\ \\ 90\\ \hline 0\end{array}$$

The answer is 20.

DIRECTIONS: Solve the following.

1. $.08\overline{)\,.4}$
2. $.900\overline{)\,1.8}$
3. $.54\overline{)\,2.7}$
4. $.44\overline{)\,2.2}$
5. $.45\overline{)\,.9}$
6. $.200\overline{)\,3.3}$
7. $.60\overline{)\,24.6}$
8. $.640\overline{)\,2.56}$
9. $.75\overline{)\,1.5}$
10. $.250\overline{)\,1.2}$
11. $.035\overline{)\,.7}$
12. $.15\overline{)\,4.5}$
13. $.735\overline{)\,2.94}$
14. $.125\overline{)\,.12}$
15. $.84\overline{)\,4.2}$

OBJECTIVE : To find quotients for whole numbers with decimal divisors

EXAMPLE: When dividing a whole number by a decimal, you must place a decimal point to the right in the dividend, $.75\overline{)60.}$

Move the decimal point to the right as far as possible in the divisor $.75.\overline{)60.}$

Then move the decimal point to the right in the dividend the same number of places that you moved it in the divisor by adding zeros

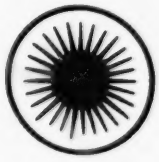
$75.\overline{)60.00.}$

Bring the decimal point straight up and divide as usual.

$$75.\overline{)6000.}\quad \begin{array}{r} 80. \\ 600 \\ \hline 0 \\ 0 \end{array}$$

DIRECTIONS: Solve each of the following.

1. $.12\overline{)600}$
2. $.850\overline{)680}$
3. $.5\overline{)75}$
4. $.27\overline{)810}$
5. $2.6\overline{)5200}$
6. $.011\overline{)77}$
7. $6.2\overline{)1271}$
8. $.150\overline{)900}$
9. $.99\overline{)594}$
10. $1.5\overline{)450}$
11. $2.2\overline{)8800}$



12. $324 \div 1.2 =$
13. $49 \div .07 =$
14. $276 \div 9.2 =$
15. $45 \div .9 =$
16. $648 \div 8.1 =$
17. $99 \div .11 =$
18. $666 \div .555 =$
19. $78 \div .06 =$
20. $876 \div .6 =$

OBJECTIVE: To divide decimals by a power of 10

EXAMPLE: (1) When dividing a decimal by 10, move the decimal point <u>one</u> place to the left.

$.6 \div 10 = .0.6 = .06$

(2) When dividing a decimal by 100, move the decimal point <u>two</u> places to the left.

$12 3.1 \div 100 = 1.2 3.4 = 1.234$

(3) When dividing a decimal by 1000, move the decimal point <u>three</u> places to the left.

$9.2 \div 1000 = .0 0 9.2 = .0092$

<u>PART I</u>

DIRECTIONS: Divide each of the following.

1) $6.4 \div 10 =$ 2) $.24 \div 10 =$ 3) $.7 \div 10 =$

4) $.056 \div 10 =$ 5) $4.57 \div 10 =$ 6) $28.3 \div 10 =$

7) $31.7 \div 100 =$ 8) $7.42 \div 100 =$ 9) $3.5 \div 100 =$

10) $.769 \div 100 =$ 11) $46 \div 100 =$ 12) $.9 \div 100 =$

13) $563.4 \div 1000 =$ 14) $.5634 \div 1000 =$ 15) $8.5 \div 1000 =$

16) $.423 \div 1000 =$ 17) $4.5 \div 1000 =$ 18) $206.7 \div 1000 =$

19) If 10 oranges cost $2.50, what is the cost of one orange?

20) Steve paid a fee of $180.00 for an option to buy ten acres of farmland. What would it cost for one acre?

21) Based on making 1,000 copies each month, the salesman said the copy machine would cost $75.50 for supplies. What is the cost of a single copy? (round to the nearest hundredth)

22) If 10 reams of paper cost $74.50, what is the cost of a single ream?

23) Judd paid $56.80 for a bulk pack of ten rolls of film. What was the cost per roll?

24) Cynthia bought 100 special delivery stamps for $78.00. What was the cost per stamp?

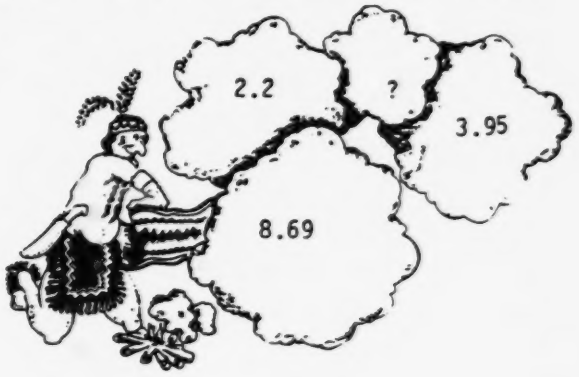
25) The printer charged the club $89.85 for 1000 membership cards. What was the cost per card? (round to the nearest hundredth)

PART II

OBJECTIVE: To solve division problems containing decimals and whole numbers

EXAMPLE:
$$2.2 \overline{)8.690} = 3.95$$

$$\begin{array}{r} 66 \\ \hline 209 \\ 198 \\ \hline 110 \\ 110 \\ \hline 0 \end{array}$$



DIRECTIONS: Solve the following:

1. $100 \overline{)36.78}$

2. $9 \overline{)50.4}$

3. $.4 \overline{)484}$

4. $16 \overline{).3488}$

5. $.007 \overline{).378}$

6. $.33 \overline{)9933}$

7. $.40 \overline{)4.040}$

8. $1000 \overline{)3.2}$

9. $10 \overline{).7653}$

10. $24 \overline{)130.80}$

11. $.250 \overline{).24}$

12. $.7 \overline{)49.07}$

OBJECTIVE: To solve one-step decimal word problems involving the four basic operations

DIRECTIONS: Find the answers to each problem below using a separate piece of paper.

1. A retailer bought 524.5 cases of Pampers. If he sold 236 cases of Pampers, how many would he have left?

2. During the annual church drive, the auxiliaries raised the following money: Monday night, $1,750.35; Tuesday night, $957.89; Wednesday night, $1,003.56; Thursday night, $725.63; and Friday night, $2,537.05. What was the total sum of money raised for the week?

3. A man sold 250 bags of peanuts at $1.50 each. What was the total of his sales?

4. Light travels 186,000 miles per second, How far can it travel in 2568.39 seconds?

5. A policeman drives 356.5 miles a week. At 15.5 miles per gallon, how many gallons of gasoline per week does he need?

6. A truck can hold 565 cases of beer. Each case weighs 10.8 lbs. Find the total weight of the cases of beer in the truck.

7. Mary needs 2.3 feet of cloth to make one blouse. If she has 46 feet of cloth, how many blouses can she make?

8. Mr. Royko bought a typewriter for $897.53 and a box of typewriter ribbons for $10.67. How much did he spend for these items?

9. Mr. and Mrs. Gary Wisby bought a washing machine and dryer for $1,365.85. They paid $500.00 cash. How much do they still owe?

10. Principal Sanchez was able to buy new equipment with the $115.60 from the P.T.A., $75.45 from the Boy Scouts, and $38.15 from the crossing guards. How much was the total donation?

11. Carmen drove 356.40 miles in 7.2 hours. What was her average speed in miles per hour?

12. The Smiths drove a total of 2,954.0 miles to the Mardi Gras in New Orleans. They used 140 gallons of gas on the trip. What was their mileage per gallon?

13. Last month James took a trip in a car and went 63.6 miles. He drove for 1.2 hours. How fast did he drive (mph)?

14. The heaviest snowfall in January for Cleveland was 19.06 inches. The next heaviest was 7.9 inches in March. How much greater was the snowfall in January than in March?

15. Milk weighs 8.355 pounds to the gallon. How much does 7.8 gallons weigh?

16. Mr. Byrne deposited $5,367.32 in his checking account. He wrote a check for his mortgage for the amount of $785.50. What was the balance in his checking account?

17. Mr. Gruber had to count the supplies for woodshop. He had 1.6 pounds of 3 inch nails, 1.9 pounds of 2 inch nails, 3.7 pounds of 1 inch nails and 2.3 pounds of half-inch nails. How many pounds of nails did he have in all?

18. Mr. Janak spent $21.87 for a 100 pound bag of cement. How much did it cost per pound? (round to the nearest hundredth)

19. The Legler Library charged $187.20 for fines in May, while the Toman Library only collected $96.55 the same month. How much more did the Legler Library collect?

20. Mrs. Komiak's illness required her to pay for drug prescriptions of $13.50, $9.80, $16.25, and $18.20. What was her total pharmacy bill?

21. If the average weight of a cubic foot of sea water is 48 pounds, then what is the weight of sea water on a diver who goes down 30.5 feet?

22. Donald drove a total of 62.7 miles last week. This week he drove 108.9 miles. What was his total mileage?

23. How many more miles did Donald drive this week than last week? (See previous problem).

24. Mrs. Fitzpatrick paid $30.39 for 23.3 gallons of gasoline. How much did it cost per gallon?

25. The Osbornes spent a total of $787.50 on their 15 day camping trip for transportation and supplies. What was their average daily cost?

OBJECTIVE: To round quotients to nearest ones

EXAMPLES:

$$8\overline{)32.8} \quad 4.1 \approx 4 \qquad \begin{array}{r} 32 \\ \hline 8 \\ 8 \\ \hline \end{array}$$

$$5\overline{)7.5} \quad 1.5 \approx 2 \qquad \begin{array}{r} 5 \\ \hline 25 \\ 25 \\ \hline \end{array}$$

DIRECTIONS: Divide and round quotients to the nearest ones for the following.

1) $6\overline{)7.2}$ 2) $3\overline{)8.1}$ 3) $4\overline{)35.2}$ 4) $9\overline{)63.9}$

5) $8\overline{)88.8}$ 6) $2\overline{)71.6}$ 7) $3\overline{)27.3}$ 8) $3\overline{)51.6}$

9) $8\overline{)25.6}$ 10) $5\overline{)18.7}$ 11) $4\overline{)12.4}$ 12) $5\overline{)19.7}$

13) $2\overline{)10.2}$ 14) $6\overline{)34.2}$ 15) $7\overline{)39.2}$ 16) $7\overline{)42.7}$

17) $5\overline{)20.5}$ 18) $9\overline{)14.4}$ 19) $6\overline{)39.6}$ 20) $7\overline{)60.2}$

OBJECTIVE : To round quotients to nearest tenths

EXAMPLES:

$$\begin{array}{r} 5.60 = 5.6 \\ 5\overline{)28.00} \\ \underline{25} \\ 30 \\ \underline{30} \\ 0 \end{array}$$

$$\begin{array}{r} 6.06 = 6.1 \\ 6\overline{)36.36} \\ \underline{36} \\ 3 \\ \underline{0} \\ 36 \\ \underline{36} \end{array}$$

DIRECTIONS: Divide and round quotients to the nearest tenths for the following.

1) $2\overline{)5.02}$ 2) $7\overline{)42.35}$ 3) $8\overline{)41.44}$ 4) $3\overline{)9.63}$

5) $4\overline{)27.16}$ 6) $5\overline{)23.05}$ 7) $2\overline{)3.10}$ 8) $3\overline{)4.44}$

9) $7\overline{)27.51}$ 10) $4\overline{)28.76}$ 11) $5\overline{)19.20}$ 12) $5\overline{)25.25}$

13) $8\overline{)28.88}$ 14) $2\overline{)17.78}$ 15) $10\overline{)12.20}$ 16) $7\overline{)86.55}$

OBJECTIVE: To round quotients to nearest hundredths

EXAMPLES:

$$3\overline{)12.123} = 4.041 \approx 4.04$$

$$\begin{array}{r} 12 \\ \hline 1 \\ 0 \\ \hline 12 \\ 12 \\ \hline 3 \\ 3 \end{array}$$

$$5\overline{)17.525} = 3.505 \approx 3.51$$

$$\begin{array}{r} 15 \\ \hline 25 \\ 25 \\ \hline 2 \\ 0 \\ \hline 25 \\ 25 \end{array}$$

DIRECTIONS: Divide and round quotients to the nearest hundredths for the following.

1) $2\overline{)24.538}$ 2) $7\overline{)16.582}$ 3) $4\overline{)5.688}$ 4) $9\overline{)15.423}$

5) $3\overline{)14.733}$ 6) $11\overline{)23.423}$ 7) $9\overline{)24.129}$ 8) $29\overline{)37.246}$

9) $3\overline{)21.021}$ 10) $17\overline{)47.873}$ 11) $5\overline{)17.400}$ 12) $8\overline{)13.451}$

13) $7\overline{)30.163}$ 14) $4\overline{)96.321}$ 15) $3\overline{)19.527}$ 16) $5\overline{)31.506}$

17) $14\overline{)36.484}$ 18) $6\overline{)19.643}$ 19) $19\overline{)20.520}$ 20) $13\overline{)57.411}$

OBJECTIVE: To round quotients to nearest thousandths

EXAMPLES:

$$8\overline{).2448} = .0306 = .031$$

$$\begin{array}{r} 0 \\ \hline 24 \\ 24 \\ \hline 4 \\ 0 \\ \hline 48 \\ 48 \\ \hline \end{array}$$

$$4\overline{)25.0556} = 6.2639 = 6.264$$

$$\begin{array}{r} 24 \\ \hline 10 \\ 8 \\ \hline 25 \\ 24 \\ \hline 15 \\ 12 \\ \hline 36 \\ 36 \\ \hline \end{array}$$

DIRECTIONS: Divide and round quotients to the nearest thousandths for the following.

1) $14\overline{)74.4114}$ 2) $31\overline{)87.4652}$ 3) $3\overline{)245.7228}$ 4) $16\overline{)91.8224}$

5) $12\overline{)1.3284}$ 6) $27\overline{)58.6241}$ 7) $5\overline{)25.8545}$ 8) $52\overline{)116.7759}$

9) $27\overline{)1892.7216}$ 10) $7\overline{)31.6852}$ 11) $2\overline{)21.0504}$ 12) $18\overline{)37.8283}$

13) $9\overline{)2.5245}$ 14) $13\overline{)41.8765}$ 15) $7\overline{)1.8123}$ 16) $61\overline{)30.45579}$

OBJECTIVE: To solve estimation word problems involving the four basic operations with decimals

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EXAMPLE: There were 15.897 feet of kite string on one ball. You used 6.143 feet of the string. How much string was left?

estimated figures	actual figures
15.900	15.897
- 6.100	- 6.143
9.800 ft.	9.754 ft.

DIRECTIONS: Solve the following estimation word problems to the nearest tenth.

1. Tyra is 55.752 inches tall. Sylvia is 52.256 inches tall. Estimate how much taller Tyra is than Sylvia.

2. One fish weighed 3.89 lbs. Another fish weighed 1.32 lbs. Estimate the total weight of the fish.

3. At one store, a radio costs $10.15. At another store the same radio costs $6.23. Estimate how much more the first radio costs.

4. A group of 10 teachers had dinner at Johnson's Inn. The total bill was $62.85. Estimate the cost per person.

5. There are 48 stamps in a box. Each stamp costs $.20. Estimate the cost for a box of stamps.

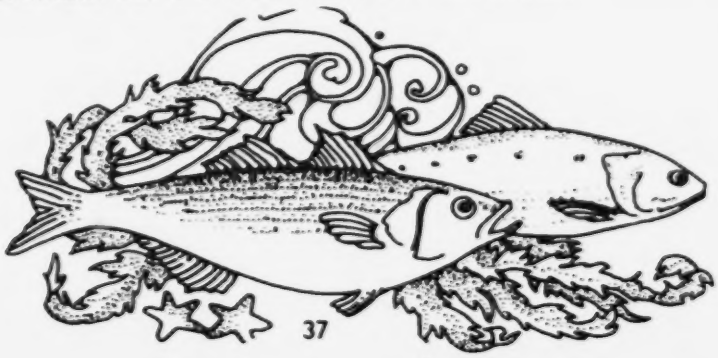
6. Erma jumped 8.50 feet across the sidewalk. Her friend jumped 6.54 feet. Estimate how much farther Erma jumped.

7. A train averaged 11.52 miles an hour for 20 hours. Estimate how many miles the train went in that length of time.

8. Thirty people chartered an airplane. The cost for the entire group was $1,280.00. Estimate the price of each airplane ticket.

9. A jug holds 9.87 liters of juice. Another jug holds 4.34 liters of juice. Write an estimate for the sum of the liters.

10. Sandra drove 2.3 miles to the park and then drove 7.4 miles to the library. Write an estimate for the total distance she drove.



OBJECTIVE: To recognize Roman numerals I to X

EXAMPLES:	ARABIC	ROMAN
	1	I
	2	II
	3	III

When a smaller Roman numeral comes in front of a larger numeral, you subtract.

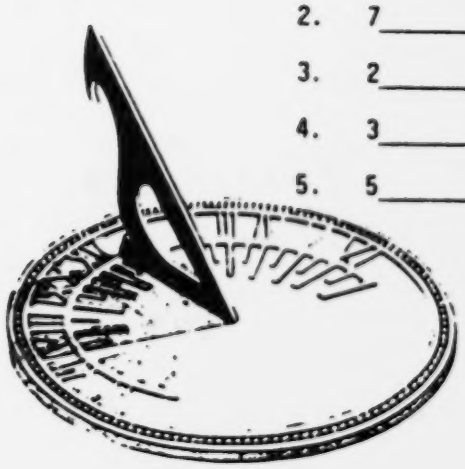
ARABIC	ROMAN	
4	IV	(5 - 1 = 4)
5	V	(5)
6	VI	(5 + 1 = 6)
7	VII	(5 + 1 + 1 = 7)
8	VIII	(5 + 1 + 1 + 1 = 8)
9	IX	(10 - 1 = 9)
10	X	(10)

DIRECTIONS: Write Arabic numerals for the Roman numerals below.

1. VII _____
2. IV _____
3. II _____
4. III _____
5. V _____
6. X _____
7. VIII _____
8. VI _____
9. I _____
10. IX _____

DIRECTIONS: Write Roman numerals for the Arabic numerals below.

1. 4 _____
2. 7 _____
3. 2 _____
4. 3 _____
5. 5 _____
6. 10 _____
7. 6 _____
8. 1 _____
9. 8 _____
10. 9 _____



OBJECTIVE: To recognize Roman numerals I to XX

EXAMPLES:

Arabic	Roman	Arabic	Roman
10	X	16	XVI (X + VI = XVI)
11	XI (X + I = XI)	17	XVII (X + VII=XVII)
12	XII (X + II = XII)	18	XVIII (X+VIII=XVIII)
13	XIII (X + III = XIII)	19	XIX (X + IX =XIX)
14	XIV (X + IV = XIV)	20	XX (X + X = XX)
15	XV (X + V = XV)		

DIRECTIONS: Write Roman numerals for the Arabic numerals below.

1. 11_____
2. 5 _____
3. 20_____
4. 3 _____
5. 14_____
6. 17_____
7. 1 _____
8. 8 _____
9. 15_____
10. 6 _____
11. 4 _____
12. 10_____
13. 18_____
14. 9 _____
15. 19_____
16. 12_____
17. 16_____
18. 7 _____
19. 13_____
20. 2 _____

21. In an encyclopedia you can find the word ROMAN in volume XVIII. What is the number of this volume?

22. What time is it when the hour hand of a clock is on X and the minute hand is on III?

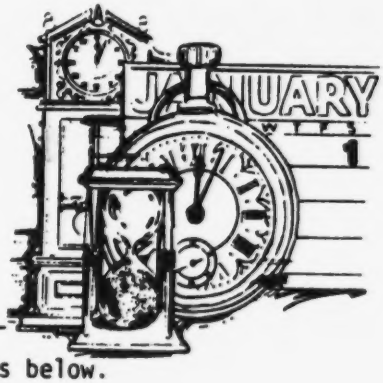
23. Was King George VI born before King George IV?

24. If an outline has nine main sections, what will be the Roman numeral for the last section?

25. If Henry Ford had numbered his experimental car models instead of using letter codes, what Roman numeral would be used for the Model T? (Hint! Count the letters. A would be I, B would be II, and so on.)

OBJECTIVE: To recognize Roman numerals I to XX, XL, L, C, D and M

EXAMPLES:	Arabic	Roman
	20	XX
	24	XXIV (XX + IV = XXIV)
	26	XXVI (XX + VI = XXVI)
	30	XXX (X + X + X = XXX)
	34	XXXIV (XXX + IV = XXXIV)
	36	XXXVI (XXX + VI = XXXVI)
	39	XXXIX (XXX + IX = XXXIX)
	40	XL
	50	L
	70	LXX (L + XX = LXX)
	90	XC
	100	C
	110	CX
	150	CL
	400	CD
	500	D
	800	DCCC (D + C + C + C)
	900	CM
	1,000	M
	1,950	MCML (M + CM + L)



DIRECTIONS: Write Arabic numerals for the Roman numerals below.

1) XC_____

2) DL_____

3) CDLII_____

4) LII_____

5) DIII_____

6) CXIV_____

7) DCCCXLVI_____

8) LXXIX_____

9) MDCXII_____

10) MCMLXXXII_____

DIRECTIONS: Use expanded notation (see examples) to explain the following numerals.

1) 70 = LXX_____

2) 43 = XLIII_____

3) 39 = XXXIX_____

4) 158 = CLVIII_____

5) 321 = CCCXXI_____

6) 27 = XXVII_____

7) 89 = LXXXIX_____

8) 66 = LXVI_____

9) 724 = DCCXXIV_____

10) 2,001 = MMI_____

603 Exercise 1

OBJECTIVE: To identify prime numbers 1 through 100

EXAMPLE: A prime number is a whole number divisible only by itself and 1. Look at these numbers: ③, ⑤, 10, ⑪, 15. The prime numbers have been circled. 10 and 15 are not prime numbers. 10 can be divided evenly by 2 and 5 ($10 \div 2 = 5$, $10 \div 5 = 2$); and 15 can be divided evenly by 3 and 5 ($15 \div 5 = 5$, $15 \div 5 = 3$).

DIRECTIONS: Use the following chart to learn about prime numbers.

1. Cross out 1 and put a circle around 2.
2. Cross out every number divisible by 2.
3. Circle 3, the next number not crossed out (1 ②③).
4. Now cross out every number divisible by 3.
5. Circle the next number not crossed out and so on.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

DIRECTIONS: Determine whether each number below is prime. Write P next to the prime numbers.

(1)	9	(2)	13	(3)	27	(4)	75	(5)	37
(6)	39	(7)	19	(8)	43	(9)	51	(10)	89
(11)	93	(12)	71	(13)	11	(14)	59	(15)	78
(16)	97	(17)	53	(18)	83	(19)	47	(20)	57

OBJECTIVE: To recognize number patterns with one or more operations

---

A number series is a sequence or group of numbers written in a special order.

Look at this number series 3, 5, 7, 9,....Each number is two more than the number before it. In some series you have to add or multiply where the numbers go up; in other series you have to subtract or divide. Some series may be a combination of any of the four basic operations.

EXAMPLES: (1) 13, 17, 21, 25, _____ ?

13 (+4) 17 (+4) 21 (+4) 25

(2) 76, 82, 75, 83, _____?

76 (+6) 82 (-7) 75 (+8) 83 (-9) 74

(3) 3, 6, 18, 72, _____ ?

3 (x2) 6 (x3) 18 (x4) 72 (x5) 360

(4) 900, 180, 45, 15, _____?

900 (÷5) 180 (÷4) 45 (÷3) 15 (÷2) 7.5

DIRECTIONS: Find the next term in the series.

1. 6, 8, 10, 12, ?_____
2. 6, 8, 11, 15, ?_____
3. 12, 18, 23, 27, ?_____
4. 60, 52, 48, 40, ?_____
5. 80, 75, 69, 62, ?_____
6. 70, 64, 59, 55, ?_____
7. 3, 6, 12, 24, 48, ?_____
8. 5, 25, 250, 5000, ?_____
9. 100, 500, 2000, 6000, ?_____
10. 600, 120, 30, 10, ?_____
11. 1200, 600, 300, 150, ?_____
12. 16, 19, 17, 20, 18, 21, ?_____
13. 18, 21, 17, 22, 16, 23, ?_____
14. 12, 48, 24, 96, 48, 192,?_____
15. 60, 70, 81, 93, 105,?_____
16. 82, 85, 88, 91, 94, ?_____
17. 12, 24, 27, 54, 57, ?_____
18. 70, 140, 144, 432, 436, ?_____
19. 96, 192, 196, 392, 397, ?_____
20. 110, 220, 224, 672, 677, ?_____

OBJECTIVE: To solve two-step decimal word problems involving the four basic operations

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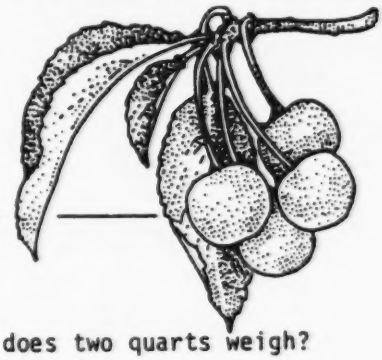
EXAMPLE: Truman bought 2.5 pounds of cherries for $.95. If he buys 25 pounds, how much would the cherries cost?

First determine the price of the cherries per pound.
Then multiply the price per pound (.38) times the number of pounds (25).

$$
\begin{array}{r}
.38 \\
2.5\overline{)\,.950} \\
75 \\
\hline
200 \\
200 \\
\hline
\end{array}
$$

$$
\begin{array}{r}
25 \\
\times\ .38 \\
\hline
200 \\
75 \\
\hline
\$9.50
\end{array}
$$



DIRECTIONS: Solve the following word problems.

1. Six quarts of paint weigh 28.8 pounds. How many pounds does two quarts weigh?

2. Jerome's car gets 102.5 miles for 5 gallons. What is the farthest distance he could plan to travel on a 20-gallon tank before refueling?

3. Anderson bought 12.5 ounces of mixed nuts for $1.25. How much would 5 ounces of mixed nuts cost?

4. Mr. Gardner did a total business of $5,000. Cost of merchandise was $500.45, and expenses were $100.28. What was his net profit?

5. A gas station pumped 675.25 gallons of gas in 2.5 hours. How many gallons were pumped in 5 hours?

6. Chandler saved $528.00 in 8 months. If he saved for only 6 months, how much would he save?

7. Denise worked 40.8 hours for 4 days. How many hours did she work in 8 days?

8. Brown's grocery store did a total business of $9,000.00. The cost of merchandise was $700.00, and expenses $195.45. What was the net profit?

9. An airplane averages 3,209.05 kilometers in 4 hours. How many kilometers did the airplane average in 10 hours?

10. Jackson earned $9.60 for 2 hours. What was his earnings for 4 hours?

OBJECTIVE: To review all concepts in 501 through 603

PART I

DIRECTIONS: Circle the correct answer.

1. Thirty-three ten-thousandths

(a) 33.1000 (b) .33 (c) .0033 (d) .033

2. Two thousand eight hundred fifty-one and four tenths

(a) 2,851.4 (b) 285.14 (c) 2,851.04 (d) 28,514.0

3. Twenty-seven millionths

(a) 27,000,000 (b) .0027 (c) .000027 (d) .00027

4. One and three hundred-thousandths

(a) 1.3 (b) 1.03 (c) 1.003 (d) 1.00003

5. 49.16

(a) forty-nine sixteenths (b) forty-nine and sixteen tenths
(c) forty-nine and sixteen hundredths (d) none of these

6. .2

(a) two (b) two tenths (c) two hundredths (d) two thousandths

7. 203.0024

(a) two hundred thirty and twenty thousandths (b) two hundred three and twenty-four ten-thousandths

(c) two hundred three and twenty-four hundredths (d) none of these

8. .056

(a) fifty-six thousandths (b) fifty-six hundredths
(c) fifty-six ten-thousandths (d) none of these

MATH REVIEW CONTINUED:

9. Which of the following is the largest: .07, .071, .1, .017.

(a) .017 (b) .1 (c) .07 (d) .071

10. Which of the following is the smallest: .062, .26, .6, .06

(a) .26 (b) .062 (c) .06 (d) .6

11. Add: 46.3 + .025 + 814 =

(a) 54.465 (b) 860.325 (c) 1.302 (d) 47.139

12. Add: .8 + 2 + 10.567 + 90.73 =

(a) 11.3297 (b) 104.097 (c) 29.640 (d) 10,409.7

13. Take .0064 from 1.008 =

(a) 1.056 (b) .1056 (c) 1.0016 (d) .942

14. Multiply 2.963 by .7 =

(a) 2.0741 (b) .20741 (c) 207.41 (d) 2,741

15. 24.16 + 6 + 1.752 + .59 =

(a) 42.33 (b) 32.502 (c) 16.068 (d) 10.758

16. .089 x 2.3 =

(a) .0247 (b) .247 (c) .2047 (d) 2.047

17. From .007 take .0038

(a) 0.320 (b) .3200 (c) .032 (d) .0032

18. Subtract: .08 - .057

(a) .230 (b) .23 (c) .0023 (d) .023

MATH REVIEW CONTINUED:

19. What is the product of 236 and 3.7 ?

(a) 873.2 (b) 8.732 (c) .8732 (d) 87.32

20. Find the sum of 71,624 + 510.2 + .982

(a) 7, 213. 582 (b) 7,235.182 (c) 72.182 (d) 72,135.182

21. Find the difference between 30 and 6.72

(a) 23.28 (b) 2,328 (c) .2328 (d) 232.8

22. .9 x .9 =

(a) 8.1 (b) 81 (c) .81 (d) .081

23. How much greater is 43 than 34.68 ?

(a) 42.15 (b) .832 (c) 8.32 (d) 34.25

24. .3 x .006 =

(a) .018 (b) .0018 (c) .18 (d) .1800

25. What is the sum of 71 and 24.42 ?

(a) 95.42 (b) .9542 (c) 954.2 (d) 97.42

26. Add: 6.6 + 72.4 + 90

(a) 228.4 (b) 961 (c) 169 (d) 22.84

27. Subtract: .356 from .5

(a) .351 (b) .144 (c) 351 (d) 14.4

28. Find the product of 24 and .9

(a) .0216 (b) .216 (c) 1.5 (d) 21.6

MATH REVIEW CONTINUED:

29. Subtract: 158 - 96.538

(a) 96.380 (b) 96,380 (c) 61.370 (d) 61.462

30. Find the cost of 65 dozen eggs at .69 cents per dozen.

(a) $44.85 (b) $44.05 (c) $45.58 (d) 44.75

31. How much is 77 yards of carpet at $4.98 per yard?

(a) $338.45 (b) $383.45 (c) $383.46 (d) $383.56

32. If Sally bought three pairs of shoes which cost $39.95 each, what would her total bill be?

(a) $120.85 (b) $119.85 (c) $119.75 (d) $118.85

33. 1000 x .362 =

(a) 362 (b) .0362 (c) 3620 (d) 3.62

34. 10 x .4 =

(a) .04 (b) 4 (c) 40 (d) .40

35. 3.17 x 100 =

(a) 31.7 (b) 03.17 (c) 3170.0 (d) 317

36. Divide: $4\overline{)18.8}$

(a) 47 (b) .047 (c) .47 (d) 4.7

37. Divide: $44\overline{)89.76}$

(a) 2.04 (b) 2.4 (c) 2.40 (d) .24

38. Find the quotient $.8\overline{)3.52}$

(a) .44 (b) 4.4 (c) .044 (d) 4.2

MATH REVIEW CONTINUED:

39. Find the quotient $.54\overline{).1728}$

(a) .32 (b) .032 (c) .320 (d) 32

40. $.006\overline{)6.54}$ =

(a) 10.90 (b) .109 (c) 1090 (d) .1900

41. Benjamin Garrett, age 21, was born on March XXV,MCMXXXIV. How old was he on March XXV,MCML?

(a) 16 (b) 14 (c) 17 (d) 25

42. MMMDCCLXXIV is equal to

(a) 3,774 (b) 3,767 (c) 3,500 (d) 3,770

43. Use Arabic numerals to represent the sum of CLII and DVI.

(a) 600 (b) 659 (c) 618 (d) 658

44. Use Arabic numerals to represent the difference of LXV from CLII.

(a) 74 (b) 78 (c) 87 (d) 47

45. Find the fifth term in the series 81, 74, 68, 63,...

(a) 43 (b) 59 (c) 60 (d) 35

46. Find the next term in the series 50, 55, 45, 50,...

(a) 45 (b) 55 (c) 65 (d) 40

47. Find the sixth term in the series 25, 50, 75,...

(a) 85 (b) 35 (c) 150 (d) 100

48. Find the next term in the series 7, 49, 343, 2,401

(a) 983 (b) 716 (c) 16,807 (d) 1372

MATH REVIEW CONTINUED:

49. Which of the following represent only prime numbers: 23, 5, 75, 66, 7 ?

(a) 23, 5, 7 (b) 5, 23, 66 (c) 23, 75, 7 (d) 5, 23, 75

50. Which represents a prime number: 100, 43, 88, 16?

(a) 43 (b) 100 (c) 16 (d) 88

51. Jack's restaurant charges $2.98 for a meal at a wedding reception. How much will meals for 86 guests cost?

(a) $69.92 (b) $235.03 (c) $256.28 (d) $265.82

52. Barbara's take-home pay is $153.96 a week. She spent $45.67 for groceries, and $24.25 to fill her car up with gas. How much did she have left from her check?

(a) $69.92 (b) $85.04 (c) $70.92 (d) $84.04

53. Mr. Lopez, a grocery store owner, paid $2,346 for 1,150 pens. How much did he pay for each pen?

(a) $.20 (b) $2.04 (c) $2.20 (d) $2.10

54. Evelyn bought a new shirt for her husband for $12.92. How much change did she get from $20.00?

(a) $7.92 (b) $8.08 (c) $7.08 (d) $8.92

55. A bus traveled 87.5 miles in 2.5 hours. What was its MPH?

(a) 3.5 MPH (b) 35 MPH (c) 350 MPH (d) .35 MPH

56. Mr. Goldberg wants to build a dog house. He needs to cut a 2.13 meter board into 3 equal pieces. How long will each piece be?

(a) 71 meters (b) .71 meter (c) 7.1 meters (d) .071 meter

57. Louis is dieting. For breakfast he had 200.5 calories, for lunch he had 376.25 calories, and for dinner he had 423.55 calories. What was his total intake of calories for that day?

(a) 1000.30 (b) 819.85 (c) 1421.5 (d) 1009.70

MATH REVIEW CONTINUED:

58. A lady paid $5.60 for a 20 pound bag of oranges. How much did the oranges cost per pound?

(a) $.24 (b) $.28 (c) $.72 (d) $.12

59. The Johnsons took a trip in their car. They had 967.5 miles to travel. They stopped for food after traveling 365.09 miles. How much farther did they have to drive?

(a) 658.14 miles (b) 628.2 miles (c) 632.14 miles (d) 602.41 miles

60. Mr. Malcolm earned $8,595 last year. He paid the Federal Government .05 of his earnings in taxes. How much did he pay in taxes?

(a) $492.60 (b) $429.75 (c) $428.55 (d) $45.22

61. Susan Nusbaum shipped a present to a daughter in college. The present weighed 55 pounds. She paid $26.40 to ship the present. What was the shipping price for each pound?

(a) $.048 (b) $48 (c) $4.8 (d) $.48

62. A carpenter has 424 ounces of screws. If one screw weighs .08 ounces, how many screws are there?

(a) 5,300 screws (b) 3,392 screws (c) 5,003 screws (d) 3,390 screws

63. Mr. and Mrs. Moore borrowed $1,575.00 from the bank. They paid back $385.00. How much money do they still owe the bank?

(a) $1,385.00 (b) $1,190.00 (c) $1,090.00 (d) $1,950.00

64. Anthony worked 5.50 hours overtime. He earns $4.85 per hour. He gets double time for overtime. How much overtime did he earn?

(a) $48.50 (b) $11.00 (c) $53.35 (d) $52.00

65. In Wisconsin it rained 10.64 inches in April, 12.47 inches in May, 8.81 inches in June, and 7.05 inches in July. What was the total rainfall for these four months?

(a) 40.97 inches (b) 36.82 inches (c) 38.97 inches (d) 42.83 inches

MATH REVIEW CONTINUED:

66. Vera paid $27.90 for 3 yards of material. What was the price of one yard of the material?

(a) $9.30 (b) $8.40 (c) $6.30 (d) $9.03

67. Mrs. Loman earns $175 per week. Her deductions are $52.36 from her check. What is her take home pay?

(a) $122.64 (b) $123.64 (c) $126.40 (d) $127.64

68. A can of tar weighs 5.25 lbs. What is the weight of 35 cans of tar?

(a) 183.75 lbs. (b) 18,375 lbs. (c) 28.375 lbs. (d) 18.37 lbs.

69. A color television is on sale for $399.95. The regular price is $529.85. How much can you save if you buy the TV on sale?

(a) $130.00 (b) $129.90 (c) $29.90 (d) $190.29

70. A train traveled 592 miles in 18.5 hours. What was the train's average speed?

(a) 32 MPH (b) 3.2 MPH (c) .32 MPH (d) .032 MPH

71. It is important to line up decimal points vertically when you___ _____ or_____ decimals.

(a) multiply or add (b) divide or multiply

(c) add or subtract (d) divide or subtract

72. The second place to the right of the decimal point is called the _____ place.

(a) tenths (b) hundredths (c) thousandths (d) ten-thousandths

73. The sixth place to the right of the decimal point is called the _____ place.

(a) thousandths (b) ten-thousandths (c) hundred-thousandths
(d) millionths

MATH REVIEW CONTINUED:

74. The first place to the left of the decimal point is called the _____place

(a) tenths (b) tens (c) ones (d) hundreds

75. When dividing by 100, you need to move the decimal point_____.

(a) one place right (b) two places right

(c) one place left (d) two places left

PART II MIXED PROBLEMS

DIRECTIONS: Solve the following problems.

1. 236.098 + 564 + .0009 =
2. .9 - .8276 =
3. 2.1 ÷ .35 =
4. 236.53 x 100 =
5. 367.02 - 108.326 =
6. .0617 + 469.333 + 82 =
7. 9.567 ÷ 1000 =
8. 54.008 x .72 =
9. 11.907 ÷ .049 =
10. 2 - .0089 =

MATH REVIEW CONTINUED

PART III

DIRECTIONS: Read the story below. Then do the exercise which follows.

LUNCH AT RICK'S

Pat, Orlando, and Beth met at Rick's Dinette for lunch to catch up on what had happened since they had last gotten together.

"Are you ready to order now?" asked the waitress after they had finished looking over the menu.

"Yes, we're ready," said Orlando.

"Can I put this all on one check?" asked the waitress.

"That's fine," said Beth.

So the waitress took their orders. Pat ordered a deluxe cheeseburger with fries for $2.95 and coffee for $0.55. Orlando asked for a club sandwich which cost $3.25 and a large coke for $0.65. Beth really wanted a hot turkey sandwich but ordered the diet plate for $2.70 and an iced tea for $0.85.

Later, after the waitress had brought the food, the three friends began to discuss Orlando's new car.

"Well," said Orlando, "the car I wanted was listed at $6836.93, but I didn't feel I could afford it. So I bought a smaller car for $5352. I paid a quarter of the cost in cash and financed the rest. It's not the car I really wanted, but the more I drive it, the more I like it."

After finishing eating, Orlando asked for the check. "What's my share and how much are we going to leave for a tip?" asked Pat. "Look at this tax," said Beth. "Seventy-seven cents seems too much. Multiply the total by .07 and see what you get."

Finally they managed to figure out the check and leave a tip. Orlando, Pat, and Beth all agreed to meet for lunch again soon.

DIRECTIONS: Solve each of the following problems by referring to the story you just read.

1. What was the total amount of the check not including the tax?
2. Was $0.77 the right amount of tax?
3. What was Orlando's share of the check before tax was added? If it was agreed to divide the tax by three, what was Orlando's share of the tax? (round off the amount).

MATH REVIEW CONTINUED

4. What was Pat's share of the check before tax was added? After?

5. What was Beth's share before tax? After?

6. Who paid the most? Orlando or Pat? By how much.

7. The three friends decided to figure the tip by multiplying the total by .15. How much did they leave for a tip?

8. Orlando put $0.75 towards the tip. Did he pay more or less than his equal share?

9. Beth and Pat each paid half of what was left to pay on the tip. How much did each pay?

10. What was the total bill including the tip?

11. Estimate how much each person could have expected to pay if the total and tip had just simply been divided by three.

12. In order to pay the restaurant check, Pat gave Orlando a $5.00 bill. Orlando himself had a ten and Beth gave him four singles. How much change did each get back?

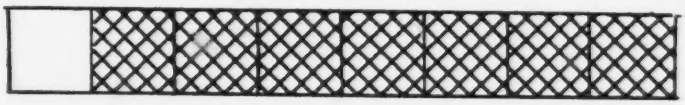
13. What was the difference in cost between the car Orlando wanted and the one he actually settled for?

14. If Orlando paid a quarter of the $5352 in cash, and one quarter equals .25 then how much did he pay in cash?

15. How much did he have left to pay on the car?

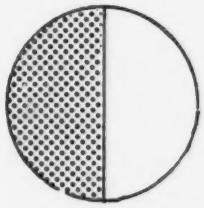
OBJECTIVE: To recognize that a fraction is a part of a whole

EXAMPLE: $\frac{7}{8} = \frac{\text{numerator}}{\text{denominator}}$



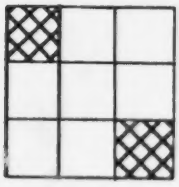
The denominator shows how many parts are in the whole. The numerator shows how many parts are shaded.

DIRECTIONS: Write a fraction which represents the shaded part.

1.  _____

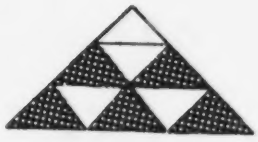
2. _____

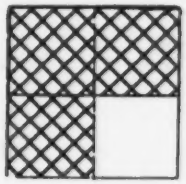
3. _____

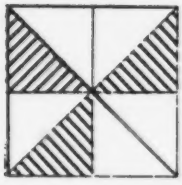
4.  _____

5. _____

6. _____

7.  _____

8.  _____

9.  _____

10. _____

OBJECTIVE: To recognize and define vocabulary and symbols related to fractions

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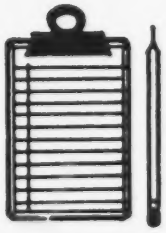
DIRECTIONS: Match the word or symbol in Column A to the meaning in Column B. Place the letter in the space provided. An example has been done for you.

	Column A	Column B
Ex. d	1. equal	a. to turn over
_____	2. LCD	b. to reduce to the lowest terms
_____	3. cancellation	c. fraction whose numerator and denominator cannot both be divided by the same whole number (expect 1)
_____	4. mixed number	d. =
_____	5. invert	e. greatest common denominator
_____	6. numerator	f. the numerator is greater than or equal to the denominator
_____	7. fractional equivalency	g. part of a number
_____	8. improper fraction	h. method of simplifying multiplication of fractions
_____	9. lowest terms	i. any number with a value of one or above.
_____	10. fraction	j. top part of a fraction that tells how many parts are used
_____	11. simplify	k. the numerator is less than the denominator
_____	12. GCD	l. least common denominator
_____	13. proper fraction	m. bottom part of a fraction that tells the number of parts into which something has been divided.
_____	14. denominator	n. a whole number with a fraction written beside it.
_____	15. whole number	o. different fractions that name the same fractional number.



OBJECTIVE: To identify fractions and mixed numbers

EXAMPLE: $\frac{7}{8}$ is a proper fraction. The numerator is less than the denominator.

$\frac{10}{9}$ is an improper fraction. The numerator is greater than or equal to the denominator.

$5\frac{1}{3}$ is a mixed number. A whole number and a fraction written side by side.

DIRECTIONS: Identify each of the following by placing (PF) if it is a proper fraction, (IF) if it is an improper fraction, and (MN) if it is a mixed number.

1) $2\frac{7}{8}$ _____

2) $\frac{20}{20}$ _____

3) $\frac{7}{3}$ _____

4) $8\frac{1}{33}$ _____

5) $\frac{3}{5}$ _____

6) $10\frac{1}{9}$ _____

7) $\frac{5}{6}$ _____

8) $\frac{1}{1}$ _____

9) $22\frac{12}{12}$ _____

10) $\frac{3}{4}$ _____

11) $\frac{97}{95}$ _____

12) $\frac{9}{10}$ _____

13) $\frac{9}{9}$ _____

14) $\frac{1}{5}$ _____

15) $\frac{63}{8}$ _____

16) $5\frac{2}{3}$ _____

17) $2\frac{5}{6}$ _____

18) $\frac{8}{9}$ _____

19) $\frac{7}{10}$ _____

20) $\frac{25}{5}$ _____

OBJECTIVE: To determine fractional equivalencies

EXAMPLE: Reduce $\frac{30}{75}$ to find its fractional equivalent

Step 1. Find a number that can be divided equally into both the numerator and the denominator. Both 30 and 75 can be divided evenly by 5 and 15. Always use the largest number that will go into both numbers evenly.

Step 2. Divide 15 into 30 and 75:

$$\frac{30}{75} \div \frac{15}{15} = \frac{2}{5}$$

DIRECTIONS: Reduce to lowest terms by finding a number which can be divided equally into the numerator and denominator of each fraction. The first two problems have been done for you.

1) $\frac{3}{12} \div \frac{3}{3} = \frac{1}{4}$

2) $\frac{8}{16} \div \frac{8}{8} = \frac{1}{2}$

3) $\frac{3}{18} \div \text{—} =$

4) $\frac{30}{60} \div \text{—} =$

5) $\frac{10}{16} \div \text{—} =$

6) $\frac{12}{15} \div \text{—} =$

7) $\frac{20}{32} \div \text{—} =$

8) $\frac{36}{54} \div \text{—} =$

9) $\frac{8}{12} \div \text{—} =$

10) $\frac{24}{72} \div \text{—} =$

11) $\frac{54}{66} \div \text{—} =$

12) $\frac{45}{60} \div \text{—} =$

13) $\frac{12}{16} \div \text{—} =$

14) $\frac{9}{12} \div \text{—} =$

15) $\frac{21}{42} \div \text{—} =$

16) $\frac{6}{54} \div \text{—} =$

17) $\frac{25}{30} \div \text{—} =$

18) $\frac{15}{60} \div \text{—} =$

19) $\frac{32}{40} \div \text{—} =$

20) $\frac{64}{72} \div \text{—} =$

21) $\frac{21}{28} \div \text{—} =$

OBJECTIVE: To determine fractional equivalencies

EXAMPLE: Raise $\frac{5}{6}$ to 30ths.

Step 1. Divide the old denominator (6) into the new denominator (30) $30 \div 6 = 5$

Step 2. Multiply both the numerator and denominator by 5.

$$\frac{5 \times 5 = 25}{5 \times 6 = 30} \qquad \frac{5}{6} = \frac{25}{30}$$

DIRECTIONS: Write the missing numerator.

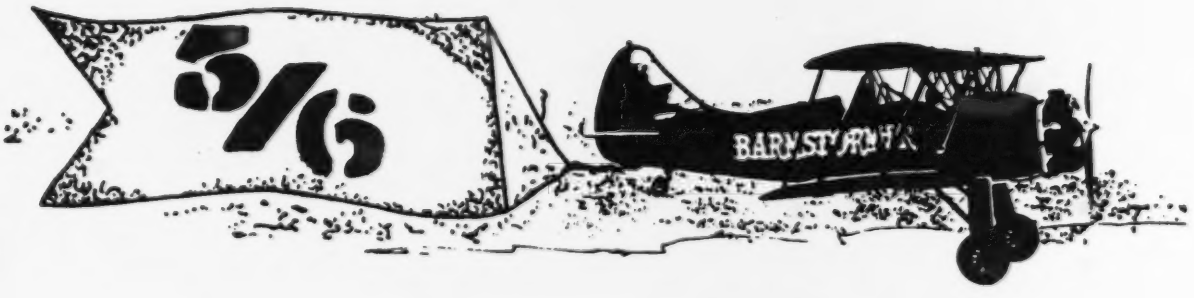
1) $\frac{1}{9} = \frac{\quad}{36}$ 2) $\frac{7}{8} = \frac{\quad}{72}$ 3) $\frac{2}{5} = \frac{\quad}{25}$ 4) $\frac{3}{4} = \frac{\quad}{12}$

5) $\frac{5}{10} = \frac{\quad}{30}$ 6) $\frac{10}{20} = \frac{\quad}{100}$ 7) $\frac{2}{8} = \frac{\quad}{80}$ 8) $\frac{1}{5} = \frac{\quad}{25}$

9) $\frac{2}{8} = \frac{\quad}{32}$ 10) $\frac{3}{8} = \frac{\quad}{16}$ 11) $\frac{1}{4} = \frac{\quad}{24}$ 12) $\frac{6}{8} = \frac{\quad}{56}$

13) $\frac{3}{7} = \frac{\quad}{21}$ 14) $\frac{2}{6} = \frac{\quad}{48}$ 15) $\frac{1}{7} = \frac{\quad}{14}$ 16) $\frac{5}{8} = \frac{\quad}{64}$

17) $\frac{1}{4} = \frac{\quad}{8}$ 18) $\frac{3}{4} = \frac{\quad}{16}$ 19) $\frac{3}{5} = \frac{\quad}{25}$ 20) $\frac{6}{13} = \frac{\quad}{52}$



OBJECTIVE: To compare fractional values

EXAMPLE: Which is larger $\frac{2}{5}$ or $\frac{1}{3}$? To determine which fraction is larger both fractions have to be written with the same denominator.

Step 1: Find a common denominator that both 5 and 3 can be divided into evenly. 5 and 3 can be divided evenly into 15. Therefore, 15 is the common denominator.

Step 2: $\frac{2}{5} = \frac{?}{15}$. To change $\frac{2}{5}$ into 15ths divide the denominator, 5, into 15 to get the number $\underline{3}$.

Step 3: Multiply the numerator of $\frac{2}{5}$, 2, times $\underline{3}$, $3 \times \frac{2}{5} = \frac{6}{15}$.

Step 4: $\frac{1}{3} = \frac{?}{15}$. To change $\frac{1}{3}$ into 15ths divide the denominator, 3, into 15 to get the number $\underline{5}$.

Step 5: Multiply the numerator of $\frac{1}{3}$, 1, times $\underline{5}$, $5 \times \frac{1}{3} = \frac{5}{15}$.

Step 6: Compare these new fractions to determine which is larger, $\frac{6}{15} > \frac{5}{15}$.

Therefore $\frac{2}{5} > \frac{1}{3}$.

DIRECTIONS: Compare each fractional value in each pair of fractions. Circle the larger fraction in each pair.

1)	$\frac{3}{4}$	2)	$\frac{3}{8}$	3)	$\frac{7}{8}$
	$\frac{2}{3}$		$\frac{5}{6}$		$\frac{1}{4}$
4)	$\frac{1}{7}$	5)	$\frac{3}{9}$	6)	$\frac{5}{8}$
	$\frac{6}{8}$		$\frac{2}{18}$		$\frac{7}{9}$
7)	$\frac{2}{3}$	8)	$\frac{1}{20}$	9)	$\frac{1}{6}$
	$\frac{5}{7}$		$\frac{6}{10}$		$\frac{2}{5}$
10)	$\frac{8}{9}$	11)	$\frac{3}{7}$	12)	$\frac{8}{10}$
	$\frac{3}{4}$		$\frac{7}{9}$		$\frac{1}{5}$

OBJECTIVE: To add like fractions

EXAMPLES: Add the numerators and place the sum over the common denominator.

1) $\frac{2}{9} + \frac{3}{9} + \frac{2}{9} = \frac{7}{9}$

2) $\frac{6}{9} + \frac{3}{9} = \frac{9}{9} = 1$

DIRECTIONS: Add the following; reduce when necessary.

1) $\frac{5}{9} + \frac{2}{9}$

2) $\frac{1}{5} + \frac{2}{5}$

3) $\frac{5}{12} + \frac{2}{12}$

4) $\frac{2}{8} + \frac{3}{8}$

5) $\frac{6}{10} + \frac{2}{10}$

6) $\frac{9}{30} + \frac{2}{30}$

7) $\frac{1}{6} + \frac{4}{6}$

8) $\frac{5}{15} + \frac{9}{15}$

9) $\frac{2}{9} + \frac{1}{9}$

10) $\frac{10}{20} + \frac{2}{20}$

11) $\frac{1}{4} + \frac{1}{4}$

12) $\frac{7}{16} + \frac{6}{16}$

13) $\frac{5}{8} + \frac{1}{8}$

14) $\frac{6}{10} + \frac{3}{10}$

15) $\frac{3}{7} + \frac{2}{7}$

16) $\frac{2}{7} + \frac{3}{7} + \frac{1}{7}$

17) $\frac{5}{20} + \frac{5}{20} + \frac{9}{20}$

18) $\frac{4}{16} + \frac{3}{16} + \frac{4}{16}$

19) $\frac{3}{8} + \frac{2}{8} + \frac{2}{8}$

20) $\frac{2}{10} + \frac{3}{10} + \frac{3}{10}$

21) $\frac{2}{8} + \frac{3}{8} + \frac{3}{8}$

22) $\frac{41}{75} + \frac{22}{75} + \frac{10}{75}$

23) $\frac{72}{250} + \frac{28}{250} + \frac{75}{250}$

24) $\frac{125}{500} + \frac{257}{500} + \frac{118}{500}$

25) $\frac{54}{99} + \frac{23}{99} + \frac{1}{99}$

OBJECTIVE: To subtract like fractions

EXAMPLES: When subtracting fractions with like denominators, subtract the numerators and place the difference over the common denominator.

1) $\begin{array}{r} \frac{5}{6} \\ -\frac{4}{6} \\ \hline \frac{1}{6} \end{array}$

2) $\begin{array}{r} \frac{6}{8} \\ -\frac{4}{8} \\ \hline \frac{2}{8} = \frac{1}{4} \end{array}$

DIRECTIONS: Subtract the following; reduce when possible.

1. $\frac{6}{9} - \frac{3}{9}$
2. $\frac{10}{10} - \frac{5}{10}$
3. $\frac{4}{7} - \frac{3}{7}$
4. $\frac{?}{9} - \frac{2}{9}$
5. $\frac{6}{8} - \frac{2}{8}$
6. $\frac{10}{20} - \frac{4}{20}$
7. $\frac{14}{15} - \frac{7}{15}$
8. $\frac{3}{8} - \frac{2}{8}$
9. $\frac{9}{12} - \frac{2}{12}$
10. $\frac{7}{15} - \frac{3}{15}$
11. $\frac{10}{11} - \frac{8}{11}$
12. $\frac{7}{15} - \frac{3}{15}$
13. $\frac{8}{27} - \frac{5}{27}$
14. $\frac{4}{9} - \frac{2}{9}$
15. $\frac{6}{8} - \frac{5}{8}$
16. $\frac{7}{13} - \frac{4}{13}$
17. $\frac{2}{3} - \frac{1}{3}$
18. $\frac{19}{24} - \frac{11}{24}$
19. $\frac{11}{19} - \frac{7}{19}$
20. $\frac{7}{10} - \frac{2}{10}$
21. $\frac{22}{50} - \frac{14}{50}$
22. $\frac{56}{125} - \frac{23}{125}$
23. $\frac{18}{32} - \frac{12}{32}$
24. $\frac{77}{458} - \frac{56}{458}$
25. $\frac{3476}{5000} - \frac{2741}{5000}$

OBJECTIVE: To change improper fractions into mixed numbers

EXAMPLE: $\frac{18}{4}$ = ?

Step 1: Divide the denominator into the numerator, 18 ÷ 4 = 4 with 2 remaining.

Step 2: Write the remainder (2) over the denominator, $4\ \frac{2}{4}$.

Step 3: Reduce if possible, $4\ \frac{2}{4} = 4\ \frac{1}{2}$.

Therefore, $\frac{18}{4} = 4\ \frac{1}{2}$.

DIRECTIONS: Change the following fractions to mixed or whole numbers.

1. $\frac{1}{1}$ =
2. $\frac{33}{2}$ =
3. $\frac{15}{4}$ =
4. $\frac{25}{5}$ =
5. $\frac{85}{7}$ =
6. $\frac{20}{20}$ =
7. $\frac{81}{9}$ =
8. $\frac{58}{8}$ =
9. $\frac{45}{9}$ =
10. $\frac{17}{7}$ =
11. $\frac{18}{7}$ =
12. $\frac{30}{15}$ =
13. $\frac{17}{5}$ =
14. $\frac{24}{8}$ =
15. $\frac{9}{3}$ =
16. $\frac{26}{8}$ =
17. $\frac{40}{15}$ =
18. $\frac{34}{4}$ =
19. $\frac{70}{10}$ =
20. $\frac{11}{11}$ =
21. $\frac{52}{25}$ =
22. $\frac{376}{200}$ =
23. $\frac{5680}{250}$ =
24. $\frac{87}{40}$ =

OBJECTIVE: To change mixed numbers into improper fractions

EXAMPLE: $4\frac{3}{5} = ?$

Step 1: Multiply the denominator by the whole number, $4 \times 5 = 20$.

Step 2: Add the numerator, $20 + 3 = 23$.

Step 3: Place the total over the denominator, $\frac{23}{5}$.

Therefore, $4\frac{3}{5} = \frac{23}{5}$.

DIRECTIONS: Change the mixed numbers to improper fractions.

1. $3\frac{2}{3} =$	2. $6\frac{4}{5} =$	3. $5\frac{3}{8} =$	4. $7\frac{6}{12} =$
5. $7\frac{1}{2} =$	6. $10\frac{3}{4} =$	7. $9\frac{9}{10} =$	8. $1\frac{6}{9} =$
9. $11\frac{7}{9} =$	10. $2\frac{5}{6} =$	11. $8\frac{1}{3} =$	12. $7\frac{2}{15} =$
13. $12\frac{6}{15} =$	14. $20\frac{8}{9} =$	15. $3\frac{2}{7} =$	16. $1\frac{5}{30} =$
17. $40\frac{2}{5} =$	18. $72\frac{10}{11} =$	19. $16\frac{1}{3} =$	20. $33\frac{3}{12} =$
21. $52\frac{4}{5} =$	22. $28\frac{3}{6} =$	23. $3\frac{78}{90} =$	24. $45\frac{3}{7} =$

OBJECTIVE: To change improper fractions into mixed numbers and mixed numbers into improper fractions

EXAMPLE 1: Change $5\frac{7}{8}$ to an improper fraction.

Step 1: Multiply the denominator by the whole number,

$5 \times 8 = 40$

Step 2: Add the numerator to the answer 40, $40 + 7 = 47$.

Step 3: Place 47 over the denominator 8, $\frac{47}{8}$.

Therefore, $5\frac{7}{8} = \frac{47}{8}$.

EXAMPLE 2: Change $\frac{19}{5}$ to a mixed number.

Step 1: Divide the denominator into the numerator, $19 \div 5 = 3$.

Step 2: Place the remainder over the denominator, $3\frac{4}{5}$.

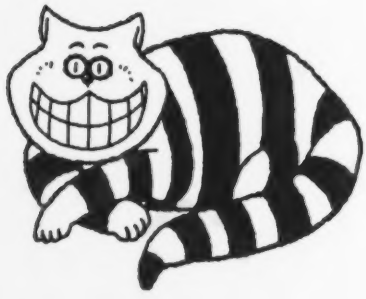
Therefore, $\frac{19}{5} = 3\frac{4}{5}$.

DIRECTIONS: Change to improper fractions.

1. $3\frac{5}{6} =$
2. $9\frac{5}{8} =$
3. $7\frac{4}{5} =$
4. $10\frac{11}{12} =$
5. $8\frac{7}{9} =$
6. $12\frac{9}{12} =$
7. $5\frac{8}{17} =$
8. $16\frac{15}{32} =$
9. $21\frac{17}{18} =$
10. $10\frac{2}{14} =$
11. $35\frac{7}{15} =$
12. $2\frac{20}{63} =$
13. $4\frac{15}{51} =$
14. $16\frac{13}{29} =$
15. $13\frac{9}{14} =$
16. $4\frac{7}{8} =$
17. $22\frac{4}{7} =$
18. $2\frac{8}{9} =$
19. $40\frac{11}{20} =$
20. $12\frac{5}{6} =$

DIRECTIONS: Change to mixed numbers or whole numbers.

1. $\frac{18}{5}$ =
2. $\frac{37}{8}$ =
3. $\frac{49}{32}$ =
4. $\frac{66}{6}$ =
5. $\frac{75}{20}$ =
6. $\frac{57}{12}$ =
7. $\frac{48}{7}$ =
8. $\frac{111}{25}$ =
9. $\frac{88}{44}$ =
10. $\frac{26}{4}$ =
11. $\frac{166}{33}$ =
12. $\frac{651}{30}$ =
13. $\frac{563}{7}$ =
14. $\frac{99}{7}$ =
15. $\frac{274}{12}$ =



OBJECTIVE: To add like mixed numbers without renaming

EXAMPLE: $2\frac{2}{4} + 1\frac{1}{4} = 3\frac{3}{4}$

Step 1: Add the numerators. 2 + 1 = 3.

Step 2: Place the numerator 3 over the denominator 4. $\frac{3}{4}$.

Step 3: Add the whole number, 2 + 1 = 3.

DIRECTIONS: Add and reduce to lowest terms.

1. $8\frac{6}{8} + 1\frac{1}{8}$

2. $7\frac{1}{7} + 3\frac{2}{7}$

3. $5\frac{1}{5} + 2\frac{3}{5}$

4. $3\frac{10}{30} + 8\frac{5}{30}$

5. $3\frac{1}{12} + 8\frac{4}{12}$

6. $2\frac{2}{9} + 1\frac{5}{9}$

7. $6\frac{1}{3} + 5\frac{1}{3}$

8. $1\frac{5}{9} + 2\frac{3}{9}$

9. $4\frac{1}{5} + 6\frac{2}{5}$

10. $110\frac{1}{4} + 99\frac{1}{4}$

11. $125\frac{2}{14} + 25\frac{2}{14}$

12. $28\frac{5}{20} + 16\frac{4}{20}$

13. $36\frac{2}{16} + 14\frac{8}{16}$

14. $42\frac{3}{15} + 10\frac{2}{15}$

15. $235\frac{1}{18} + 15\frac{2}{18}$

16. $15\frac{11}{18} + 38\frac{4}{18}$

17. $17\frac{1}{21} + 3\frac{2}{21}$

18. $6\frac{5}{24} + 1\frac{3}{24}$

19. $2\frac{7}{10} + 15\frac{2}{10}$

20. $37\frac{10}{20} + 52\frac{5}{20}$

OBJECTIVE: To add like mixed numbers with renaming

EXAMPLE: $2\frac{1}{5} + 3\frac{4}{5} = 5\frac{5}{5} = 6$

Step 1: Add the numerators. 1 + 4 = 5.

Step 2: Place the numerator 5 over the denominator 5. $\frac{5}{5}$.

Step 3: Add the whole numbers, 2 + 3 = 5.

Step 4: Change the improper fraction $\frac{5}{5}$ to a whole number 1, 5 + 1 = 6.

DIRECTIONS: Add and reduce to lowest terms.

1. $1\frac{3}{4} + 3\frac{2}{4}$

2. $7\frac{3}{8} + 2\frac{6}{8}$

3. $5\frac{9}{10} + 6\frac{3}{10}$

4. $17\frac{1}{2} + 6\frac{3}{2}$

5. $1\frac{13}{14} + 2\frac{3}{14}$

6. $3\frac{12}{24} + 6\frac{13}{24}$

7. $2\frac{13}{18} + 4\frac{14}{18}$

8. $2\frac{11}{13} + 14\frac{11}{13}$

9. $15\frac{25}{110} + 28\frac{95}{110}$

10. $17\frac{3}{7} + 4\frac{5}{7}$

11. $125\frac{4}{8} + 16\frac{5}{8}$

12. $3\frac{21}{56} + 2\frac{43}{56}$

13. $2\frac{8}{9} + 5\frac{3}{9}$

14. $64\frac{17}{20} + 14\frac{13}{20}$

15. $42\frac{18}{19} + 3\frac{2}{19}$

16. $9\frac{2}{9} + 63\frac{7}{9}$

17. $11\frac{16}{21} + 16\frac{19}{21}$

18. $6\frac{15}{18} + 7\frac{10}{18}$

19. $83\frac{14}{15} + 104\frac{12}{15}$

20. $67\frac{20}{35} + 9\frac{25}{35}$

OBJECTIVE: To subtract like mixed numbers without renaming

EXAMPLE: $5\frac{5}{10} - 3\frac{1}{10} = 2\frac{4}{10} = 2\frac{2}{5}$

Step 1: Subtract the numerators, $5 - 1 = 4$.
Step 2: Place the numerator 4 over the denominator 10.
Step 3: Subtract the whole numbers, $5 - 3 = 2$.
Step 4: Reduce to lowest terms. $2\frac{4}{10} = 2\frac{2}{5}$

DIRECTIONS: Subtract and reduce to the lowest terms.

1. $7\frac{5}{6} - 4\frac{2}{6}$

2. $9\frac{10}{12} - 2\frac{5}{12}$

3. $16\frac{9}{24} - 8\frac{3}{24}$

4. $112\frac{4}{8} - 92\frac{1}{8}$

5. $24\frac{7}{15} - 12\frac{2}{15}$

6. $35\frac{11}{27} - 8\frac{3}{27}$

7. $10\frac{2}{3} - 9\frac{1}{3}$

8. $6\frac{6}{9} - 3\frac{3}{9}$

9. $321\frac{5}{20} - 289\frac{2}{20}$

10. $95\frac{7}{17} - 18\frac{2}{17}$

11. $24\frac{9}{19} - 20\frac{8}{19}$

12. $9\frac{5}{6} - 8\frac{1}{6}$

13. $27\frac{15}{16} - 9\frac{1}{16}$

14. $219\frac{9}{77} - 19\frac{5}{77}$

15. $9\frac{5}{64} - 1\frac{1}{64}$

16. $26\frac{8}{32} - 17\frac{4}{32}$

17. $8\frac{9}{13} - 2\frac{3}{13}$

18. $17\frac{25}{28} - 16\frac{23}{28}$

19. $36\frac{4}{5} - 24\frac{1}{5}$

20. $73\frac{11}{13} - 14\frac{8}{13}$

OBJECTIVE: To subtract liked mixed numbers with renaming.

EXAMPLE: $3 = 2\frac{2}{2}$

$-\ 1\frac{1}{2} = 1\frac{1}{2}$

$1\frac{1}{2}$

Step 1: Rename the whole number 3 as a mixed number using 2 as the denominator, $3 = 2\frac{2}{2}$.

Step 2: Subtract the numerators, $2 - 1 = 1$.

Step 3: Subtract the whole numbers, $2 - 1 = 1$.

DIRECTIONS: Subtract and reduce to lowest terms.

1. $7 - 6\frac{1}{4}$

2. $16 - 8\frac{1}{8}$

3. $26 - 1\frac{1}{12}$

4. $8 - 3\frac{3}{4}$

5. $19 - 8\frac{3}{11}$

6. $54 - 26\frac{6}{18}$

7. $30 - 26\frac{6}{18}$

8. $2 - 1\frac{1}{2}$

9. $14 - 12\frac{5}{6}$

10. $20 - 10\frac{1}{12}$

11. $42 - 40\frac{4}{9}$

12. $13 - 6\frac{4}{17}$

13. $28 - 13\frac{1}{3}$

14. $54 - 24\frac{11}{23}$

15. $105 - 98\frac{6}{20}$

16. $51 - 8\frac{2}{7}$

17. $111 - 17\frac{9}{13}$

18. $7 - 2\frac{2}{5}$

19. $28 - 13\frac{5}{9}$

20. $15 - 5\frac{6}{10}$

OBJECTIVE: To subtract like mixed numbers with renaming

EXAMPLE: $7\frac{4}{11} = 6\frac{11}{11} + \frac{4}{11} = 6\frac{15}{11}$

$-\ 2\frac{5}{11} \qquad\qquad = 2\frac{5}{11}$

$4\frac{10}{11}$

Step 1: Rename the whole number 7 as a mixed number $6\frac{11}{11}$.

Step 2: Add the fraction $\frac{4}{11}$ to $6\frac{11}{11}$. which equals $6\frac{15}{11}$.

Step 3: Subtract the numerators, 15 - 5 = 10.

Step 4: Subtract the whole numbers, 6 - 2 = 4.

DIRECTIONS: Subtract and reduce to lowest terms.

1. $14\frac{5}{6} - 8\frac{9}{6}$

2. $8\frac{1}{3} - 2\frac{2}{3}$

3. $7\frac{2}{4} - 6\frac{3}{4}$

4. $9\frac{1}{9} - 6\frac{4}{9}$

5. $23\frac{4}{8} - 12\frac{7}{8}$

6. $9\frac{8}{16} - 5\frac{12}{16}$

7. $33\frac{7}{12} - 13\frac{8}{12}$

8. $16\frac{11}{13} - 8\frac{12}{13}$

9. $11\frac{5}{10} - 7\frac{6}{10}$

10. $105\frac{2}{14} - 96\frac{9}{14}$

11. $15\frac{4}{12} + 6\frac{7}{12}$

12. $20\frac{10}{24} \quad 19\frac{23}{24}$

13. $6\frac{1}{4} - 5\frac{2}{4}$

14. $18\frac{5}{15} - 7\frac{12}{15}$

15. $9\frac{2}{8} - 6\frac{4}{8}$

16. $7\frac{1}{3} - 3\frac{2}{3}$

17. $15\frac{15}{22} - 6\frac{18}{22}$

18. $81\frac{12}{33} - 12\frac{14}{33}$

19. $16\frac{6}{9} - 13\frac{8}{9}$

20. $81\frac{4}{11} - 26\frac{8}{11}$

OBJECTIVE: To find common and least common denominators

EXAMPLE (1): $\frac{2}{3}$ and $\frac{4}{5}$ = $\frac{\quad}{?}$ — Multiply together the two given denominators (3 x 5) to get the common denominator 15.

$\frac{2}{3}$ and $\frac{4}{5}$ = $\frac{\quad}{15}$ — 15 contains exactly all the given denominators 3 and 5, consequently; 15 is the common denominator.

EXAMPLE (2): $\frac{5}{6}$ and $\frac{7}{8}$ = $\frac{\quad}{?}$ — Multiply the largest given denominator 8 first by 2 and then by 3 to get the least common denominator.

$\frac{5}{6}$ and $\frac{7}{8}$ = $\frac{\quad}{?}$

2 x 8 = 16, — However, 16 is not the least common denominator because it cannot be evenly divided by 6.

3 x 8 = 24, — The least common denominator is 24 because it contains exactly all the given denominators (6 and 8).

DIRECTIONS: Circle the least common denominator.

1. $\frac{1}{2}$ and $\frac{1}{6}$ = $\frac{\quad}{?}$ — 6, 11, 8, 10

2. $\frac{3}{9}$ and $\frac{2}{6}$ = $\frac{\quad}{?}$ — 15, 9, 18, 14

3. $\frac{1}{3}$ and $\frac{1}{4}$ = $\frac{\quad}{?}$ — 7, 9, 12, 15

4. $\frac{6}{8}$ and $\frac{4}{7}$ = $\frac{\quad}{?}$ — 15, 56, 21, 24

5. $\frac{2}{7}$ and $\frac{7}{14}$ = $\frac{\quad}{?}$ — 14, 17, 15, 29

6. $\frac{3}{5}$ and $\frac{1}{8}$ = $\frac{\quad}{?}$ — 43, 39, 42, 40

7. $\frac{1}{9}$ and $\frac{2}{4}$ = $\frac{?}{}$	24.	20.	36.	35
8. $\frac{2}{15}$ and $\frac{2}{5}$ = $\frac{?}{}$	10.	11.	15.	12
9. $\frac{5}{6}$ and $\frac{8}{36}$ = $\frac{?}{}$	37.	36.	40.	45
10. $\frac{5}{12}$ and $\frac{7}{8}$ = $\frac{?}{}$	36.	24.	41.	50
11. $\frac{1}{2}$, $\frac{7}{8}$, $\frac{2}{3}$ = $\frac{?}{}$	8.	16.	24.	25
12. $\frac{5}{16}$, $\frac{5}{8}$, $\frac{5}{6}$ = $\frac{?}{}$	12.	18.	32.	48
13. $\frac{4}{5}$ and $\frac{7}{10}$ = $\frac{?}{}$	10.	12.	11.	13
14. $\frac{2}{6}$ and $\frac{1}{9}$ = $\frac{?}{}$	9.	18.	17.	16
15. $\frac{5}{18}$ and $\frac{5}{6}$ = $\frac{?}{}$	12.	15.	18.	20
16. $\frac{5}{3}$, $\frac{6}{12}$, $\frac{1}{8}$ = $\frac{?}{}$	27.	15.	23.	24
17. $\frac{2}{7}$ and $\frac{3}{4}$ = $\frac{?}{}$	22.	21.	28.	27
18. $\frac{3}{12}$ and $\frac{1}{36}$ = $\frac{?}{}$	36.	48.	37.	42
19. $\frac{4}{9}$, $\frac{2}{5}$, $\frac{1}{45}$ = $\frac{?}{}$	90.	45.	46.	91
20. $\frac{3}{6}$ and $\frac{5}{4}$ = $\frac{?}{}$	24.	18.	12.	48

OBJECTIVE: To add unlike fractions

EXAMPLE: $\frac{2}{5} = \frac{4}{10}$

$+ \frac{1}{10} = \frac{1}{10}$

$\frac{5}{10} = \frac{1}{2}$

Step 1: Find the least common denominator = 10.

Step 2: Write the appropriate fractional equivalents, $\frac{2}{5} = \frac{4}{10}$ and $\frac{1}{10} = \frac{1}{10}$.

Step 3: Add the numerators, 4 + 1 = 5.

Step 4: Reduce, $\frac{5}{10} = \frac{1}{2}$.

DIRECTIONS: Add and reduce to lowest terms.

1) $\frac{4}{9} + \frac{2}{18} =$

2) $\frac{5}{15} + \frac{2}{5} =$

3) $\frac{1}{3} + \frac{4}{27} =$

4) $\frac{1}{24} + \frac{3}{8} =$

5) $\frac{4}{20} + \frac{1}{5} =$

6) $\frac{2}{28} + \frac{2}{7} =$

7) $\frac{4}{12} + \frac{1}{6} =$

8) $\frac{3}{12} + \frac{2}{4} =$

9) $\frac{4}{36} + \frac{2}{6} =$

10) $\frac{1}{12} + \frac{1}{6} =$

11) $\frac{2}{9} + \frac{1}{3} =$

12) $\frac{4}{36} + \frac{2}{9} =$

13) $\frac{5}{8} + \frac{1}{2} =$

14) $\frac{1}{4} + \frac{5}{16} =$

15) $\frac{11}{54} + \frac{7}{9} =$

16) $\frac{24}{50} + \frac{18}{25} =$

OBJECTIVE: To add unlike fractions

EXAMPLE: $\frac{2}{3} = \frac{4}{6}$

$+ \frac{1}{2} = \frac{3}{6}$

$\frac{7}{6} = 1\frac{1}{6}$

Ans. $1\frac{1}{6}$ hours

Jackie waited at the bus stop for $\frac{2}{3}$ of an hour. The bus ride downtown took $\frac{1}{2}$ an hour. How much time did it take Jackie all together?

DIRECTIONS: Add and reduce to lowest terms.

1. $\frac{2}{9} + \frac{2}{4}$

2. $\frac{1}{7} + \frac{6}{8}$

3. $\frac{3}{4} + \frac{1}{3}$

4. $\frac{5}{6} + \frac{2}{5}$

5. $\frac{5}{9} + \frac{3}{6}$

6. $\frac{3}{8} + \frac{4}{5}$

7. $\frac{6}{9} + \frac{4}{5}$

8. $\frac{1}{3} + \frac{7}{8}$

9. $\frac{2}{3} + \frac{4}{5}$

10. $\frac{3}{5} + \frac{1}{3}$

11. $\frac{2}{6} + \frac{1}{4}$

12. $\frac{6}{7} + \frac{4}{5}$

13. $\frac{7}{8} + \frac{5}{6}$

14. $\frac{1}{5} + \frac{6}{8}$

15. $\frac{7}{9} + \frac{5}{7}$

16. $\frac{4}{9} + \frac{5}{6}$

OBJECTIVE: To subtract unlike fractions

EXAMPLE: $\frac{7}{9} = \frac{7}{9}$

$-\frac{1}{3} = \frac{3}{9}$

$\frac{4}{9}$

Step 1: Find the least common denominator. (9).

Step 2: Write the appropriate fractional equivalents, $\frac{7}{9} = \frac{7}{9}$ and $\frac{1}{3} = \frac{3}{9}$.

Step 3: Subtract the numerators, 7 - 3 = 4.

Step 4: Reduce, if possible. $\frac{4}{9}$ cannot be reduced.

DIRECTIONS: Subtract and reduce to lowest terms.

1) $\frac{13}{16} - \frac{5}{8}$

2) $\frac{3}{24} - \frac{1}{12}$

3) $\frac{4}{9} - \frac{9}{45}$

4) $\frac{4}{6} - \frac{9}{48}$

5) $\frac{5}{6} - \frac{1}{2}$

6) $\frac{2}{9} - \frac{4}{81}$

7) $\frac{15}{16} - \frac{3}{4}$

8) $\frac{4}{5} - \frac{11}{25}$

9) $\frac{3}{8} - \frac{1}{24}$

10) $\frac{6}{30} - \frac{1}{6}$

11) $\frac{12}{14} - \frac{3}{7}$

12) $\frac{6}{7} - \frac{4}{21}$

13) $\frac{2}{4} - \frac{5}{28}$

14) $\frac{1}{4} - \frac{1}{8}$

15) $\frac{3}{9} - \frac{12}{72}$

16) $\frac{7}{8} - \frac{2}{3}$

OBJECTIVE: To subtract unlike fractions

EXAMPLE: $\frac{5}{8} = \frac{15}{24}$

$-\ \frac{1}{3} = \frac{8}{24}$

$\frac{7}{24}$ yard

Marilyn had $\frac{5}{8}$ yard of twine. She needed $\frac{1}{3}$ yard to finish making a plant holder. How much twine did she have left?

DIRECTIONS: Subtract and reduce to lowest terms.

1) $\frac{6}{8} - \frac{1}{5}$ =

2) $\frac{6}{7} - \frac{4}{5}$ =

3) $\frac{5}{9} - \frac{1}{4}$ =

4) $\frac{4}{5} - \frac{2}{3}$ =

5) $\frac{7}{8} - \frac{5}{7}$ =

6) $\frac{5}{6} - \frac{3}{5}$ =

7) $\frac{7}{18} - \frac{1}{3}$ =

8) $\frac{1}{2} - \frac{3}{9}$ =

9) $\frac{2}{4} - \frac{1}{3}$ =

10) $\frac{3}{5} - \frac{1}{4}$ =

11) $\frac{3}{5} - \frac{1}{2}$ =

12) $\frac{5}{6} - \frac{3}{4}$ =

13) $\frac{6}{7} - \frac{1}{2}$ =

14) $\frac{7}{8} - \frac{2}{3}$ =

15) $\frac{4}{15} - \frac{1}{5}$ =

16) $\frac{73}{100} - \frac{16}{25}$ =

OBJECTIVE: To add unlike mixed numbers without renaming

EXAMPLE: $16\frac{2}{5} = 16\frac{4}{10}$

$+ 3\frac{1}{2} = 3\frac{5}{10}$

$19\frac{9}{10}$

Step 1: Find the least common denominator.

Step 2: Write the appropriate fractional equivalents, $\frac{2}{5} = \frac{4}{10}$ and $\frac{1}{2} = \frac{5}{10}$.

Step 3: Add the numerators, 4 + 5 = 9.

Step 4: Add the whole numbers, 16 + 3 = 19.

DIRECTIONS: Add and reduce to lowest terms.

1) $11\frac{1}{3} + 9\frac{2}{5}$

2) $7\frac{1}{8} + 6\frac{2}{3}$

3) $1\frac{5}{6} + 2\frac{1}{8}$

4) $9\frac{1}{3} + 3\frac{3}{7}$

5) $24\frac{5}{7} + 4\frac{1}{8}$

6) $12\frac{2}{5} + 4\frac{1}{2}$

7) $6\frac{1}{4} + 8\frac{2}{3}$

8) $1\frac{3}{6} + 1\frac{2}{5}$

9) $11\frac{1}{3} + 2\frac{1}{2}$

10) $7\frac{1}{2} + 3\frac{2}{7}$

11) $8\frac{2}{4} + 7\frac{2}{5}$

12) $9\frac{1}{2} + 3\frac{2}{5}$

13) $6\frac{2}{9} + 4\frac{3}{4}$

14) $9\frac{1}{6} + 4\frac{4}{7}$

15) $3\frac{1}{6} + 4\frac{1}{9}$

OBJECTIVE: To add unlike mixed numbers with renaming

EXAMPLE:

$$\begin{array}{rcl} 8\ \frac{3}{5} & = & 8\ \frac{12}{20} \\ +\ 2\ \frac{3}{4} & = & 2\ \frac{15}{20} \\ \hline & & 10\ \frac{27}{20} \end{array}$$

Ans. $11\ \frac{7}{20}$

Step 1: Find the least common denominator.

Step 2: Add the numerators of the new fractions and the whole numbers,

$8\ \frac{12}{20} + 2\ \frac{15}{20} = 10\ \frac{27}{20}$.

Step 3: Change the improper fraction $\frac{27}{20}$ to a mixed number $1\ \frac{7}{20}$ and combine with the whole number 10, $10 + 1\ \frac{7}{20} = 11\ \frac{7}{20}$.

DIRECTIONS: Add and reduce to lowest terms.

1) $14\ \frac{1}{2} + 2\ \frac{3}{4}$

2) $9\ \frac{4}{5} + 6\ \frac{2}{9}$

3) $1\ \frac{6}{7} + 2\ \frac{2}{3}$

4) $17\ \frac{4}{9} + 5\ \frac{5}{7}$

5) $13\ \frac{11}{12} + 24\ \frac{2}{6}$

6) $8\ \frac{6}{7} + 9\ \frac{2}{5}$

7) $8\ \frac{12}{24} + 3\ \frac{4}{6}$

8) $9\ \frac{27}{56} + 3\ \frac{6}{7}$

9) $9\ \frac{1}{2} + 10\ \frac{3}{5}$

10) $18\ \frac{3}{5} + 2\ \frac{5}{6} + 8\ \frac{1}{10}$

11) $18\ \frac{2}{3} + 8\ \frac{6}{9} + 6\ \frac{4}{6}$

12) $15\ \frac{6}{72} + 8\ \frac{4}{9} + 3\ \frac{4}{8}$

OBJECTIVE: To subtract unlike mixed numbers without renaming

EXAMPLE: $5\frac{4}{5} = 5\frac{12}{15}$

$-\ 3\frac{1}{3} = 3\frac{5}{15}$

$2\frac{7}{15}$

Step 1: Find the least common denominator.

Step 2: Subtract $\frac{5}{15}$ from $\frac{12}{15}$.

Step 3: Subtract the whole numbers, 5 - 3 = 2,

Step 4: Reduce if possible.

DIRECTIONS: Subtract and reduce to lowest terms.

1) $5\frac{1}{2} - 3\frac{1}{3}$

2) $7\frac{4}{10} - 3\frac{8}{40}$

3) $8\frac{3}{4} - 6\frac{2}{24}$

4) $13\frac{2}{4} - 10\frac{1}{16}$

5) $9\frac{6}{9} - 1\frac{1}{3}$

6) $16\frac{2}{13} - 2\frac{2}{26}$

7) $117\frac{2}{9} - 29\frac{9}{63}$

8) $18\frac{16}{42} - 15\frac{1}{6}$

9) $110\frac{4}{9} - 105\frac{3}{36}$

10) $11\frac{8}{22} - 9\frac{2}{11}$

11) $108\frac{3}{4} - 36\frac{2}{8}$

12) $11\frac{9}{12} - 10\frac{3}{4}$

13) $11\frac{3}{4} - 5\frac{1}{12}$

14) $18\frac{8}{22} - 12\frac{2}{11}$

15) $14\frac{6}{8} - 6\frac{1}{3}$

16) $151\frac{2}{3} - 21\frac{2}{7}$

OBJECTIVE: To subtract unlike mixed numbers with renaming

EXAMPLE: $15\frac{2}{9} = 15\frac{2}{9} = 14\frac{11}{9}$

$-\ 3\frac{1}{3} = 3\frac{3}{9} = 3\frac{3}{9}$

$11\frac{8}{9}$

Step 1: Find the least common denominator.

Step 2: Since $\frac{3}{9}$ cannot be subtracted from $\frac{2}{9}$ rename 15 as $14\frac{9}{9}$ $(1 = \frac{9}{9})$.

Step 3: Add $14\frac{9}{9} + \frac{2}{9} = 14\frac{11}{9}$.

Step 4: Subtract $3\frac{3}{9}$ from $14\frac{11}{9} = 11\frac{8}{9}$.

DIRECTIONS: Subtract and reduce to lowest terms.

1) $6\frac{5}{16}$
$-4\frac{6}{8}$

2) $4\frac{1}{3}$
$-\ 1\frac{4}{6}$

3) $9\frac{1}{3}$
$-\ 6\frac{2}{5}$

4) $11\frac{2}{4}$
$-\ 8\frac{7}{9}$

5) $36\frac{1}{5}$
$-\ 14\frac{1}{2}$

6) $21\frac{2}{5}$
$-\ 10\frac{4}{8}$

7) $118\frac{7}{63}$
$-\ 24\frac{4}{9}$

8) $25\frac{1}{7}$
$-\ 23\frac{3}{14}$

9) $81\frac{2}{72}$
$-\ 12\frac{8}{9}$

10) $15\frac{3}{35}$
$-\ 10\frac{5}{7}$

11) $12\frac{1}{5}$
$-\ 2\frac{2}{9}$

12) $2\frac{1}{12}$
$-\ 1\frac{1}{6}$

OBJECTIVE: To solve fractional word problems with addition and subtraction

EXAMPLE: Darlene weighed $239\frac{1}{2}$ pounds. How much did she weigh after losing $11\frac{3}{4}$ pounds?

$$239\frac{1}{2} = 239\frac{2}{4} = 238\frac{6}{4}$$
$$-\ 11\frac{3}{4} = 11\frac{3}{4} = 11\frac{3}{4}$$
$$227\frac{3}{4} \text{ pounds.}$$

DIRECTIONS: Solve the following word problems using another sheet of paper.

1. Margie baked two kinds of cookies. One contained $2\frac{3}{4}$ cups of sugar, the other contained $1\frac{1}{4}$ cups of sugar. What was the difference in the amounts of sugar used?

2. Ms. Taylor used $4\frac{7}{8}$ yards of material to make a dress. She took the material from a bolt that was 8 yards long. How much material was left?

3. Richard jogged $2\frac{1}{2}$ miles before breakfast and $4\frac{3}{4}$ miles after dinner. How many miles did he jog all together?

4. McDade's Bakery used $5\frac{8}{16}$ pounds of flour to bake rolls. The flour was taken from a 10 pound bag. How much flour was left?

5. Marla works part-time as a clerk. Monday she worked $4\frac{3}{4}$ hours. Tuesday she worked $5\frac{1}{4}$ hours. Wednesday she worked $5\frac{1}{2}$ hours. Thursday she worked $4\frac{1}{3}$ hours, and Friday she worked 5 hours. How many hours did Marla work for the week?

6. Tennille mailed a graduation gift to her niece. The empty box weighed $\frac{5}{14}$ pounds. The full box weighed $7\frac{3}{14}$ pounds. What was the weight of the gift?

7. Mrs. Rowe bought $48\frac{7}{12}$ yards of material. She used $6\frac{5}{6}$ yards to make a pair of of curtains. How long was the piece that was left?

8. Mr. McNabb worked $20\frac{1}{4}$ hours overtime last week and $16\frac{1}{2}$ hours overtime this week. How much overtime did he make in these two weeks?

9. Last month, the gauge on Mr. Lozada's car showed that his car had been driven $849\frac{9}{10}$ miles. This month the gauge showed a reading of $908\frac{2}{10}$ miles. How many miles did Mr. Lozada drive this month?

10. Mrs. Lopez is $60\frac{1}{4}$ inches tall. Her son, Jorge, is $5\frac{1}{2}$ inches taller. How tall is Jorge?

OBJECTIVE: To multiply a fraction by a fraction

EXAMPLE: Multiply numerators by numerators and denominators by denominators. Then simplify the answer if necessary.

$$\frac{1}{2} \times \frac{1}{2} \times \frac{2}{3} = \frac{2}{12} = \frac{1}{6}$$

DIRECTIONS: Multiply the following fractions. Simplify when necessary.

1) $\frac{2}{4} \times \frac{3}{12} =$

2) $\frac{1}{6} \times \frac{1}{6} =$

3) $\frac{2}{8} \times \frac{7}{10} =$

4) $\frac{7}{8} \times \frac{8}{14} =$

5) $\frac{10}{11} \times \frac{11}{40} =$

6) $\frac{6}{49} \times \frac{7}{81} =$

7) $\frac{5}{72} \times \frac{12}{60} =$

8) $\frac{16}{17} \times \frac{4}{18} =$

9) $\frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} =$

10) $\frac{1}{2} \times \frac{2}{4} \times \frac{4}{6} =$

11) $\frac{5}{14} \times \frac{8}{11} \times \frac{11}{17} =$

12) $\frac{1}{2} \times \frac{2}{3} \times \frac{3}{4} =$

13) $\frac{2}{5} \times \frac{5}{8} \times \frac{9}{10} =$

14) $\frac{2}{6} \times \frac{4}{10} \times \frac{5}{12} =$

15) $\frac{3}{15} \times \frac{5}{18} \times \frac{6}{21} =$

16) $\frac{1}{7} \times \frac{9}{10} \times \frac{6}{21} =$

17) $\frac{4}{15} \times \frac{4}{5} \times \frac{3}{10} =$

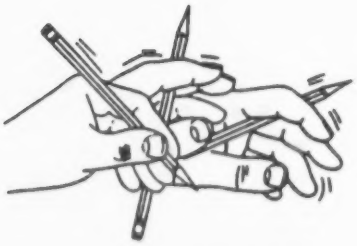
18) $\frac{4}{6} \times \frac{2}{14} \times \frac{1}{3} =$

19) $\frac{5}{35} \times \frac{7}{40} \times \frac{8}{45} =$

20) $\frac{2}{5} \times \frac{11}{24} \times \frac{4}{55} =$

OBJECTIVE: To use cancellation to solve multiplication problems

EXAMPLE: $\frac{2}{4} \times \frac{2}{6} = ?$



Step 1: Cancel 2 and 6 by dividing by 2, $2 \div 2 = 1$ and $6 \div 2 = 3$. Cross out the 2 and 6.

$\frac{1}{\cancel{2}\,2} \times \frac{2}{\cancel{6}\,3} =$

Step 2: Cancel 2 and 4 by dividing by 2, $2 \div 2 = 1$ and $4 \div 2 = 2$. Cross out the 2 and the 4.

$\frac{1}{\cancel{2}\,2} \times \frac{1}{\cancel{2}\,3} =$

Step 3: Multiply across by the new numbers. $1 \times 1 = 1$ and $2 \times 3 = 6$.

$\frac{1}{\cancel{2}\,2} \times \frac{1}{\cancel{2}\,3} = \frac{1}{6}$

DIRECTIONS: Cancel and multiply.

1) $\frac{3}{6} \times \frac{1}{9} =$

2) $\frac{2}{12} \times \frac{6}{15} =$

3) $\frac{5}{10} \times \frac{2}{7} =$

4) $\frac{6}{9} \times \frac{12}{14} =$

5) $\frac{7}{12} \times \frac{4}{14} =$

6) $\frac{9}{10} \times \frac{5}{18} =$

7) $\frac{4}{11} \times \frac{3}{12} =$

8) $\frac{1}{10} \times \frac{2}{7} =$

9) $\frac{8}{32} \times \frac{4}{40} =$

10) $\frac{6}{9} \times \frac{3}{36} =$

11) $\frac{3}{16} \times \frac{8}{15} =$

12) $\frac{11}{18} \times \frac{9}{55} =$

13) $\frac{36}{48} \times \frac{8}{81} =$

14) $\frac{8}{15} \times \frac{4}{56} =$

15) $\frac{12}{45} \times \frac{9}{24} =$

16) $\frac{7}{64} \times \frac{16}{24} =$

OBJECTIVE: To use cancellation to solve multiplication problems

EXAMPLE: $\frac{3}{5} \times \frac{20}{27} = ?$

$$\frac{\overset{1}{\cancel{3}}}{\underset{1}{\cancel{5}}} \times \frac{\overset{4}{\cancel{20}}}{\underset{9}{\cancel{27}}} = \frac{4}{9}$$

DIRECTIONS: Cancel and multiply.

1) $\frac{9}{16} \times \frac{12}{18} =$

2) $\frac{5}{11} \times \frac{11}{25} =$

3) $\frac{3}{9} \times \frac{3}{12} =$

4) $\frac{13}{14} \times \frac{7}{26} =$

5) $\frac{8}{12} \times \frac{3}{64} =$

6) $\frac{8}{28} \times \frac{7}{56} =$

7) $\frac{16}{20} \times \frac{4}{32} =$

8) $\frac{36}{48} \times \frac{24}{63} =$

9) $\frac{9}{40} \times \frac{10}{11} =$

10) $\frac{2}{5} \times \frac{3}{4} =$

11) $\frac{3}{9} \times \frac{18}{24} =$

12) $\frac{5}{25} \times \frac{10}{15} =$

13) $\frac{2}{5} \times \frac{1}{12} \times \frac{3}{7} =$

14) $\frac{10}{14} \times \frac{7}{18} \times \frac{3}{7} =$

15) $\frac{5}{6} \times \frac{6}{20} \times \frac{4}{9} =$

16) $\frac{2}{4} \times \frac{8}{16} \times \frac{4}{24} =$

17) $\frac{6}{8} \times \frac{8}{36} \times \frac{6}{14} =$

18) $\frac{7}{21} \times \frac{3}{42} \times \frac{2}{50} =$

OBJECTIVE: To solve multiplication problems containing a fraction and a whole number

EXAMPLE: $8 \times \frac{3}{4} = ?$

Step 1: Write 8 as a fraction, $8 = \frac{8}{1}$.

Step 2: Cancel 8 and 4 by dividing by 4, $\frac{\overset{2}{\cancel{8}}}{1} \times \frac{3}{\underset{1}{\cancel{4}}}$.

Step 3: Multiply across, $\frac{2}{1} \times \frac{3}{1} = \frac{6}{1}$.

Step 4: Change the improper fraction to a whole or mixed number, $\frac{6}{1} = 6$.

DIRECTIONS: Multiply and reduce.

1) $5 \times \frac{3}{6} =$

2) $7 \times \frac{2}{4} =$

3) $\frac{5}{12} \times 12 =$

4) $4 \times \frac{3}{7} =$

5) $18 \times \frac{4}{9} =$

6) $\frac{1}{4} \times 28 =$

7) $\frac{7}{9} \times 18 =$

8) $\frac{8}{15} \times 60 =$

9) $10 \times \frac{3}{65} =$

10) $\frac{11}{32} \times 56 =$

11) $49 \times \frac{6}{21} =$

12) $3 \times \frac{8}{18} =$

13) $\frac{9}{28} \times 3 =$

14) $24 \times \frac{20}{72} =$

15) $\frac{5}{18} \times 14 =$

16) $10 \times \frac{3}{60} =$

17) $105 \times \frac{40}{630} =$

18) $\frac{6}{8} \times 6 =$

19) $33 \times \frac{11}{15} =$

20) $\frac{21}{72} \times 48 =$

21) $22 \times \frac{18}{44} =$

OBJECTIVE: To solve multiplication problems containing a fraction and a mixed number

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EXAMPLE: $2\frac{3}{4} \times \frac{2}{5} = ?$

$$2\frac{\overset{1}{\cancel{4}}}{\underset{}{\cancel{4}}} \times \frac{\overset{}{\cancel{2}}}{5} = \frac{11}{10}$$

$$\frac{11}{10} = 1\frac{1}{10}$$

Step 1: Change $2\frac{3}{4}$ to an improper fraction, $2\frac{3}{4} = \frac{11}{4}$.

Step 2: Proceed with multiplication as usual.

Step 3: If the answer is an improper fraction, change it to a mixed number.

DIRECTIONS: Multiply and reduce.

1) $1\frac{2}{3} \times \frac{1}{4} =$

2) $1\frac{3}{7} \times \frac{2}{3} =$

3) $\frac{6}{8} \times 5\frac{4}{10} =$

4) $\frac{3}{4} \times 8\frac{1}{3} =$

5) $5\frac{3}{7} \times \frac{5}{22} =$

6) $\frac{2}{11} \times 5\frac{3}{6} =$

7) $10\frac{9}{20} \times \frac{12}{90} =$

8) $\frac{4}{8} \times 6\frac{2}{16} =$

9) $6\frac{4}{6} \times \frac{3}{5} =$

10) $\frac{24}{44} \times 66\frac{6}{12} =$

11) $2\frac{2}{10} \times \frac{6}{11} =$

12) $7\frac{3}{11} \times \frac{5}{10} =$

13) $\frac{35}{70} \times 3\frac{3}{4} =$

14) $7\frac{1}{5} \times \frac{4}{9} =$

15) $21\frac{6}{9} \times \frac{12}{35} =$

16) $4\frac{1}{2} \times \frac{5}{10} =$

17) $\frac{65}{150} \times 200\frac{30}{60} =$

18) $3\frac{5}{6} \times \frac{7}{12} =$

OBJECTIVE: To solve multiplication problems containing a whole number and a mixed number

EXAMPLE: $3 \times 2\frac{4}{9} = ?$

Step 1. Change the whole number (3) to an improper fraction by placing it over (1), $\frac{3}{1}$.

Step 2. Change the mixed number ($2\frac{4}{9}$) to an improper fraction, $\frac{22}{9}$.

Step 3. Proceed with multiplication as usual, $\frac{3^{1}}{1} \times \frac{22}{9_{3}} = \frac{22}{3}$.

Step 4. Change the improper fraction ($\frac{22}{3}$) to a mixed number, $7\frac{1}{3}$.

Therefore, $3 \times 2\frac{4}{9} = 7\frac{1}{3}$.

DIRECTIONS: Multiply and reduce.

1. $2 \times 3\frac{7}{6} =$
2. $5 \times 4\frac{5}{6} =$
3. $4 \times 1\frac{7}{8} =$
4. $7\frac{1}{3} \times 12 =$
5. $3\frac{1}{4} \times 16 =$
6. $6 \times 2\frac{9}{10} =$
7. $2\frac{2}{9} \times 9 =$
8. $5\frac{4}{11} \times 66 =$
9. $3\frac{5}{8} \times 12 =$
10. $4\frac{2}{3} \times 14 =$
11. $2\frac{8}{10} \times 45 =$
12. $7\frac{5}{7} \times 21 =$
13. $24 \times 6\frac{7}{9} =$
14. $33 \times 2\frac{11}{22} =$
15. $1\frac{12}{35} \times 20 =$
16. $20 \times 3\frac{1}{5} =$
17. $72 \times 3\frac{5}{16} =$
18. $3\frac{3}{4} \times 42 =$

PART I

OBJECTIVE: To solve multiplication problems containing mixed numbers

EXAMPLE: $2\frac{1}{2} \times 3\frac{3}{4} = ?$

Step 1. Change both mixed numbers to improper fractions,

$2\frac{1}{2} = \frac{5}{2}$ and $3\frac{3}{4} = \frac{15}{4}$

Step 2. Proceed with multiplication as usual,

$\frac{5}{2} \times \frac{15}{4} = \frac{75}{8}$

Step 3. Change the improper fraction $\frac{75}{8}$ to a mixed number $9\frac{3}{8}$ Therefore, $2\frac{1}{2} \times 3\frac{3}{4} = 9\frac{3}{8}$

DIRECTIONS: Multiply and reduce.

1. $4\frac{1}{2} \times 6\frac{4}{5} =$
2. $3\frac{5}{9} \times 6\frac{6}{18} =$
3. $1\frac{4}{5} \times 7\frac{4}{15} =$
4. $5\frac{1}{8} \times 2\frac{1}{3} =$
5. $?\frac{2}{3} \times 2\frac{3}{8} =$
6. $4\frac{3}{4} \times 5\frac{3}{4} =$
7. $8\frac{5}{6} \times 6\frac{3}{5} =$
8. $3\frac{6}{10} \times 2\frac{11}{12} =$
9. $9\frac{1}{4} \times 6\frac{1}{8} =$
10. $4\frac{3}{5} \times 6\frac{1}{10} =$
11. $4\frac{8}{9} \times 8\frac{9}{12} =$
12. $6\frac{6}{16} \times 7\frac{1}{8} =$
13. $14\frac{1}{6} \times 6\frac{1}{3} =$
14. $8\frac{1}{5} \times 9\frac{3}{10} =$
15. $3\frac{16}{29} \times 5\frac{7}{10} =$
16. $9\frac{5}{8} \times 2\frac{10}{11} =$
17. $15\frac{0}{10} \times 7\frac{1}{2} =$
18. $7\frac{3}{10} \times 12\frac{1}{2} =$
19. $5\frac{1}{4} \times 1\frac{1}{3} \times 2\frac{1}{2} =$
20. $1\frac{5}{6} \times 2\frac{7}{8} \times 1\frac{3}{4} =$

PART II

OBJECTIVE: To solve multiplication problems containing fractions, whole numbers and mixed numbers

DIRECTIONS: Multiply and reduce.

1. $5\frac{1}{3} \times 8\frac{1}{12} =$
2. $9\frac{1}{2} \times 3\frac{1}{4} =$
3. $8\frac{1}{2} \times 7\frac{4}{5} =$
4. $\frac{6}{7} \times \frac{2}{3} =$
5. $\frac{3}{10} \times \frac{1}{5} =$
6. $\frac{18}{31} \times \frac{21}{44} =$
7. $\frac{32}{40} \times \frac{55}{64} =$
8. $10 \times \frac{15}{25} =$
9. $6 \times \frac{4}{5} =$
10. $\frac{13}{14} \times 7 =$
11. $12 \times \frac{20}{36} =$
12. $\frac{33}{555} \times 11 =$
13. $1\frac{2}{3} \times \frac{6}{15} =$
14. $3\frac{3}{5} \times \frac{2}{3} =$
15. $\frac{3}{16} \times 2\frac{2}{3} =$
16. $5\frac{4}{6} \times \frac{12}{32} =$
17. $\frac{10}{15} \times 20 =$
18. $\frac{2}{9} \times \frac{2}{3} \times \frac{6}{18} =$
19. $\frac{2}{5} \times \frac{7}{15} \times \frac{21}{25} =$
20. $\frac{7}{6} \times \frac{3}{24} \times \frac{12}{14} =$

OBJECTIVE: To solve fractional word problems with multiplication

EXAMPLE: Mrs. Nolan had $\frac{4}{5}$ of a pound of sugar. She used $\frac{3}{4}$ of it.

How much sugar did she use? $\frac{3}{\cancel{4}_{1}} \times \frac{\overset{1}{\cancel{4}}}{5} = \frac{3}{5}$ pound

DIRECTIONS: Solve the following problems; reduce if possible. Use another sheet of paper.

1. Mr. Gray's take home pay is $210 a week. He spends $\frac{1}{3}$ of his income for food. What does he pay a week for food?
2. One square foot of soil weighs 51 $\frac{1}{4}$ pounds. How much does $\frac{4}{5}$ square feet of soil weigh?
3. Jerry needed 7 $\frac{2}{9}$ yards of chicken wire for a fence. If a yard costs $7.20, how much would 7 $\frac{2}{9}$ yards cost?
4. Mrs. Grizzard earns $6.00 an hour. How much money does she earn in 12 $\frac{1}{2}$ hours?
5. At the beginning of the month a T.V. salesman had 480 new television sets. By the middle of the month he had sold $\frac{2}{5}$ of them. How many T.V.'s did he sell?
6. A pound of grapefruit costs $1.25. How much does 4 $\frac{3}{5}$ pounds cost?
7. Mrs. Darby paid $14.00 for one yard of material. How much would 5 $\frac{3}{7}$ yards of material cost?
8. Cashews were on sale in the candy department at Marshall Field's for $3.60 a pound. How much did Priscilla pay for $\frac{3}{4}$ pound?
9. Lucita wanted to cut in half the amount of caffeine in her diet. A can of her favorite soda pop contains 52 grams of caffeine. If she normally drinks 7 $\frac{1}{2}$ cans per week, how many cans should she now drink? How many grams of caffeine would that be?
10. A bread recipe calls for 6 $\frac{1}{4}$ cups of flour to make three loaves. Mrs. Meyers wants to make ten loaves or 3 $\frac{1}{2}$ times her recipe. How many cups of flour would she need?

801 Exercise 1

OBJECTIVE: To divide a fraction by a fraction

When dividing fractions you invert the divisor and follow the same steps for multiplying fractions. The divisor is the fraction to the right of the division sign ($\div$).

EXAMPLE: $\frac{1}{3} \div \frac{1}{6} = ?$

Step 1: Invert the divisor so $\frac{1}{6}$ becomes $\frac{6}{1}$

Step 2: Change the division sign ($\div$) to a multiplication sign (x), $\frac{1}{3} \times \frac{6}{1}$.

Step 3: Cancel and multiply, $\frac{1}{\cancel{3}_1} \times \frac{\cancel{6}^2}{1} = \frac{2}{1}$.

Step 4: Change the improper fraction to a whole number, $\frac{2}{1} = 2$.

DIRECTIONS: Divide the following using the rules above. Remember to reduce.

1) $\frac{3}{5} \div \frac{6}{9} =$

2) $\frac{7}{10} \div \frac{3}{5} =$

3) $\frac{2}{7} \div \frac{12}{14} =$

4) $\frac{3}{8} \div \frac{9}{16} =$

5) $\frac{3}{20} \div \frac{6}{20} =$

6) $\frac{2}{3} \div \frac{4}{12} =$

7) $\frac{1}{2} \div \frac{3}{6} =$

8) $\frac{2}{8} \div \frac{4}{16} =$

9) $\frac{5}{8} \div \frac{25}{48} =$

10) $\frac{3}{12} \div \frac{24}{72} =$

11) $\frac{6}{10} \div \frac{36}{40} =$

12) $\frac{5}{11} \div \frac{33}{40} =$

13) $\frac{7}{9} \div \frac{63}{81} =$

14) $\frac{27}{30} \div \frac{9}{10} =$

15) $\frac{6}{8} \div \frac{54}{72} =$

16) $\frac{5}{8} \div \frac{2}{6} =$

OBJECTIVE: To divide a whole number by a fraction

EXAMPLE: $8 \div \frac{4}{6} = ?$

$\frac{8}{1} \times \frac{6}{4} = 12$

Step 1. Write the whole number 8 as a fraction, $\frac{8}{1}$.

Step 2: Invert the divisor, $\frac{8}{1} \div \frac{6}{4}$.

Step 3: Change the division sign to a multiplication sign.

Step 4: Follow the rules for multiplying fraction, $\frac{\overset{2}{\cancel{8}}}{1} \times \frac{6}{\underset{1}{\cancel{4}}} = 12$.

DIRECTIONS: Divide the following. Reduce to lowest terms.

1. $7 \div \frac{1}{4} =$

2) $3 \div \frac{2}{4} =$

3) $5 \div \frac{6}{8} =$

4) $8 \div \frac{4}{16} =$

5) $19 \div \frac{1}{9} =$

6) $4 \div \frac{2}{3} =$

7) $11 \div \frac{22}{35} =$

8) $24 \div \frac{10}{12} =$

9) $25 \div \frac{10}{20} =$

10) $36 \div \frac{8}{9} =$

11) $16 \div \frac{3}{4} =$

12) $9 \div \frac{9}{10} =$

13) $27 \div \frac{2}{3} =$

14) $8 \div \frac{4}{6} =$

15) $25 \div \frac{2}{5} =$

16) $7 \div \frac{3}{10} =$

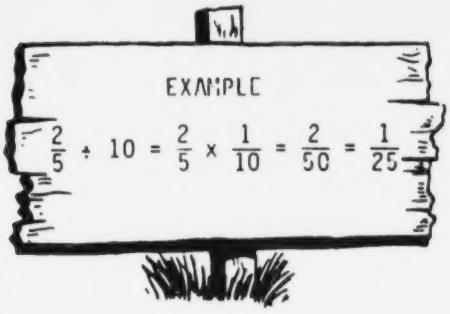
17) $2 \div \frac{9}{18} =$

18) $50 \div \frac{4}{20} =$

19) $4 \div \frac{5}{12} =$

20) $10 \div \frac{5}{6} =$

OBJECTIVE: To divide a fraction by a whole number



Step 1: Write the whole number 10 as an improper fraction by placing it over 1, $\frac{2}{5} \div \frac{10}{1}$.

Step 2: Invert the divisor, $\frac{2}{5} \div \frac{1}{10}$.

Step 3: Change the division sign to a multiplication sign, $\frac{2}{5} \times \frac{1}{10}$.

Step 4: Following the rules for multiplying fractions, multiply and reduce.

DIRECTIONS: Divide the following; reduce if possible.

1) $\frac{6}{10} \div 9 =$

2) $\frac{3}{4} \div 9 =$

3) $\frac{1}{5} \div 15 =$

4) $\frac{1}{2} \div 10 =$

5) $\frac{4}{5} \div 8 =$

6) $\frac{7}{11} \div 14 =$

7) $\frac{2}{5} \div 20 =$

8) $\frac{3}{5} \div 21 =$

9) $\frac{2}{5} \div 4 =$

10) $\frac{4}{8} \div 4 =$

11) $\frac{3}{8} \div 8 =$

12) $\frac{9}{10} \div 5 =$

13) $\frac{5}{6} \div 6 =$

14) $\frac{2}{6} \div 10 =$

15) $\frac{3}{8} \div 15 =$

16) $\frac{25}{30} \div 60 =$

17) $\frac{8}{9} \div 72 =$

18) $\frac{12}{14} \div 33 =$

OBJECTIVE: To divide a mixed number by a fraction

EXAMPLE: $1\frac{1}{2} \div \frac{1}{4} = ?$

Step 1: Change the mixed fraction into an improper fraction, $1\frac{1}{2} = \frac{3}{2}$.

Step 2: Invert the divisor, $\frac{1}{4} = \frac{4}{1}$.

Step 3: Multiply and reduce to lowest terms, $\frac{3}{1^{\cancel{2}}} \times \frac{\cancel{4}^{2}}{1} = \frac{6}{1} = 6$

DIRECTIONS: Divide the following fractions and reduce to lowest terms.

1) $2\frac{1}{5} \div \frac{1}{3} =$

2) $1\frac{1}{8} \div \frac{1}{2} =$

3) $4\frac{1}{3} \div \frac{1}{4} =$

4) $6\frac{1}{2} \div \frac{1}{6} =$

5) $3\frac{3}{4} \div \frac{1}{5} =$

6) $2\frac{1}{9} \div \frac{3}{5} =$

7) $5\frac{1}{6} \div \frac{3}{6} =$

8) $6\frac{2}{5} \div \frac{7}{8} =$

9) $8\frac{1}{4} \div \frac{2}{4} =$

10) $1\frac{1}{4} \div \frac{1}{4} =$

11) $7\frac{3}{4} \div \frac{1}{7} =$

12) $8\frac{1}{3} \div \frac{6}{8} =$

13) $9\frac{1}{7} \div \frac{5}{8} =$

14) $2\frac{3}{9} \div \frac{1}{7} =$

15) $7\frac{1}{5} \div \frac{9}{12} =$

16) $22\frac{1}{3} \div \frac{2}{9} =$

17) $42\frac{4}{5} \div \frac{2}{20} =$

18) $18\frac{3}{6} \div \frac{3}{12} =$

OBJECTIVE: To divide a mixed number by a whole number

EXAMPLE: $2\frac{1}{2} \div 7 = ?$

Step 1: Change the mixed fraction into an improper fraction, $2\frac{1}{2} = \frac{5}{2}$

Step 2: Change the whole number, 7, into an improper fraction, $\frac{7}{1}$.

Step 3: Invert the divisor, $\frac{5}{2} \div \frac{1}{7}$.

Step 4: Change the division sign to a multiplication sign and proceed as usual, $\frac{5}{2} \times \frac{1}{7} = \frac{5}{14}$.

DIRECTIONS: Divide the following fractions and reduce to lowest terms.

1) $3\frac{1}{2} \div 2 =$

2) $1\frac{2}{5} \div 4 =$

3) $6\frac{1}{3} \div 3 =$

4) $2\frac{3}{4} \div 5 =$

5) $9\frac{7}{8} \div 6 =$

6) $4\frac{2}{6} \div 6 =$

7) $8\frac{1}{2} \div 7 =$

8) $6\frac{2}{5} \div 3 =$

9) $4\frac{1}{8} \div 7 =$

10) $8\frac{1}{2} \div 7 =$

11) $2\frac{1}{3} \div 2 =$

12) $4\frac{2}{6} \div 3 =$

13) $5\frac{1}{3} \div 4 =$

14) $6\frac{3}{8} \div 2 =$

15) $7\frac{1}{8} \div 3 =$

16) $20\frac{1}{3} \div 3 =$

17) $41\frac{3}{5} \div 4 =$

18) $12\frac{4}{12} \div 2 =$

OBJECTIVE: To divide a fraction by a mixed number

EXAMPLE:

$\frac{1}{3} \div 4\frac{1}{2} = ?$

Step 1: Change the mixed fraction into an improper fraction, $\frac{1}{3} \div \frac{9}{2}$.

Step 2: Invert the divisor, $\frac{1}{3} \div \frac{2}{9}$.

Step 3: Change the division sign to a mutiplication sign, $\frac{1}{3} \times \frac{2}{9}$.

Step 4: Using multiplication rules; multiply, and reduce to the lowest terms, $\frac{1}{3} \times \frac{2}{9} = \frac{2}{27}$.

DIRECTIONS: Divide the following fractions and reduce to lowest terms.

1) $\frac{5}{12} \div 1\frac{2}{3} =$

2) $\frac{7}{8} \div 6\frac{1}{5} =$

3) $\frac{6}{9} \div 3\frac{1}{7} =$

4) $\frac{1}{2} \div 5\frac{1}{8} =$

5) $\frac{3}{4} \div 5\frac{3}{6} =$

6) $\frac{3}{6} \div 2\frac{2}{3} =$

7) $\frac{7}{9} \div 4\frac{1}{8} =$

8) $\frac{4}{8} \div 7\frac{1}{9} =$

9) $\frac{3}{9} \div 7\frac{1}{8} =$

10) $\frac{3}{8} \div 2\frac{1}{7} =$

11) $\frac{4}{12} \div 3\frac{1}{3} =$

12) $\frac{7}{16} \div 2\frac{9}{12} =$

13) $\frac{5}{6} \div 2\frac{3}{8} =$

14) $\frac{4}{8} \div 1\frac{1}{2} =$

15) $\frac{9}{12} \div 1\frac{5}{9} =$

16) $\frac{12}{15} \div 2\frac{1}{2} =$

OBJECTIVE: To divide a whole number by a mixed number

EXAMPLE: $3 \div 2\frac{1}{3} = ?$

Step 1: Change 3 into an improper fraction, $\frac{3}{1}$.

Step 2: Change the mixed fraction into an improper fraction, $2\frac{1}{3} = \frac{7}{3}$

Step 3: Invert the divisor, $\frac{3}{1} \div \frac{3}{7}$.

Step 4: Change the division sign to a multiplication sign, $\frac{3}{1} \times \frac{3}{7}$.

Step 5: Using the multiplication rules, $\frac{3}{1} \times \frac{3}{7} = \frac{9}{7} = 1\frac{2}{7}$

DIRECTIONS: Divide the following fractions and reduce to lowest terms.

1) $4 \div 3\frac{1}{3} =$

2) $9 \div 1\frac{1}{4} =$

3) $2 \div 3\frac{3}{4} =$

4) $2 \div 7\frac{1}{2} =$

5) $7 \div 2\frac{3}{4} =$

6) $1 \div 2\frac{1}{7} =$

7) $6 \div 5\frac{1}{2} =$

8) $21 \div 3\frac{1}{8} =$

9) $8 \div 1\frac{2}{3} =$

10) $15 \div 4\frac{3}{4} =$

11) $10 \div 2\frac{1}{4} =$

12) $5 \div 6\frac{5}{7} =$

13) $4 \div 4\frac{1}{4} =$

14) $2 \div 8\frac{9}{12} =$

15) $2 \div 3\frac{3}{4} =$

16) $6 \div \frac{2}{6} =$

17) $12 \div 5\frac{2}{4} =$

18) $50 \div 25\frac{7}{8} =$

OBJECTIVE: To divide a mixed number by a mixed number

EXAMPLE: $5\frac{5}{6} \div 2\frac{1}{3} = ?$

▶ Step 1: Change both of the mixed numbers to improper fractions, $5\frac{5}{6} = \frac{35}{6}$ and $2\frac{1}{3} = \frac{7}{3}$.

▶ Step 2: Invert the divisor, $\frac{35}{6} \div \frac{3}{7}$.

▶ Step 3: Proceed as usual, $\frac{35}{6} \times \frac{7}{3} = 2\frac{1}{2}$.

DIRECTIONS: Solve each of the following problems; reduce when possible.

1) $4\frac{4}{5} \div 3\frac{1}{2} =$

2) $1\frac{4}{5} \div 5\frac{1}{7} =$

3) $6\frac{6}{8} \div 2\frac{4}{16} =$

4) $9\frac{1}{3} \div 4\frac{2}{3} =$

5) $7\frac{1}{7} \div 6\frac{3}{7} =$

6) $5\frac{5}{8} \div 4\frac{1}{6} =$

7) $1\frac{7}{8} \div 4\frac{2}{3} =$

8) $3\frac{4}{7} \div 3\frac{3}{5} =$

9) $3\frac{2}{3} \div 4\frac{2}{5} =$

10) $6\frac{1}{2} \div 3\frac{1}{4} =$

11) $2\frac{1}{2} \div 1\frac{3}{5} =$

12) $10\frac{2}{3} \div 5\frac{1}{5} =$

13) $15\frac{1}{3} \div 3\frac{3}{4} =$

14) $7\frac{1}{7} \div 12\frac{2}{4} =$

15) $2\frac{1}{10} \div 2\frac{2}{5} =$

16) $12\frac{2}{3} \div 3\frac{1}{4} =$

PART II

OBJECTIVE: To solve division problems containing fractions, whole numbers and mixed numbers

DIRECTIONS: Divide and reduce.

1. $\frac{3}{8} \div \frac{1}{3} =$

2. $\frac{2}{7} \div \frac{6}{7} =$

3. $\frac{14}{18} \div \frac{32}{40} =$

4. $\frac{11}{15} \div \frac{22}{30} =$

5. $9 \div \frac{27}{30} =$

6. $6 \div \frac{36}{50} =$

7. $4 \div \frac{16}{46} =$

8. $\frac{9}{12} \div 3 =$

9. $\frac{20}{25} \div 10 =$

10. $\frac{7}{9} \div 63 =$

11. $20 \div \frac{45}{53} =$

12. $8\frac{2}{5} \div \frac{20}{15} =$

13. $\frac{3}{8} \div 3\frac{1}{2} =$

14. $2\frac{1}{4} \div 4 =$

15. $60 \div 12\frac{5}{8} =$

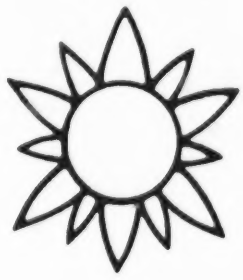
16. $72 \div 9\frac{4}{8} =$

17. $4\frac{4}{5} \div 10\frac{4}{5} =$

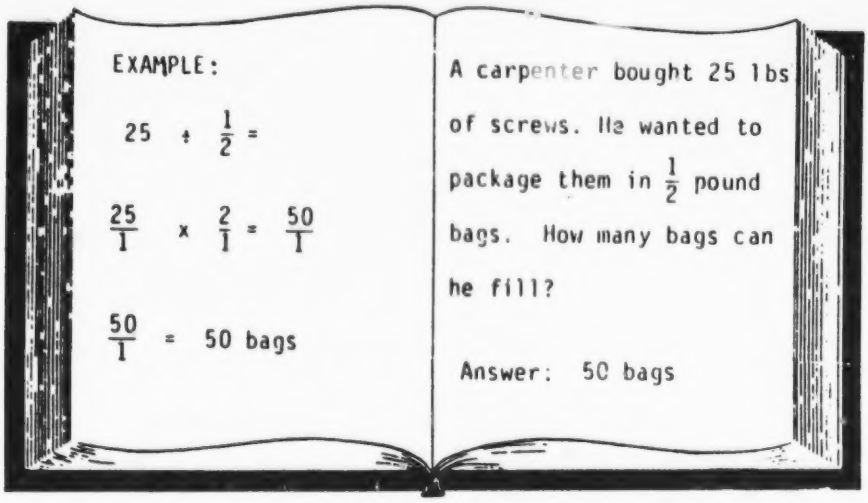
18. $9\frac{5}{10} \div 7\frac{2}{4} =$

19. $5\frac{5}{7} \div 3\frac{3}{7} =$

20. $3\frac{5}{9} \div 8\frac{4}{5} =$



OBJECTIVE: To solve fractional word problems with division


EXAMPLE:
25 ÷ 1/2 =
25/1 x 2/1 = 50/1
50/1 = 50 bags
A carpenter bought 25 lbs of screws. He wanted to package them in 1/2 pound bags. How many bags can he fill?
Answer: 50 bags

DIRECTIONS: Solve the following problems; reduce if necessary. Use a separate sheet of paper to show your work.

1. Darlene has $\frac{1}{2}$ pound of cookies. She wants to share the cookies evenly among 4 of her daughter's friends. What amount of cookies would each get?
2. Mrs. Cherry had $2\frac{5}{6}$ pies left from a bake sale. If she split the remaining pies evenly among her 3 daughters-in-law, how much would each receive?
3. Mr. Daniels cut an $8\frac{2}{6}$ foot long pipe into 10 equal pieces. How long was each piece?
4. A 15-inch towel absorbs $2\frac{1}{4}$ ounces of water. How much water is absorbed per inch?
5. How many pieces of ribbon each $3\frac{1}{2}$ feet long can be cut from $24\frac{1}{2}$ foot bolt?
6. Virginia needs $1\frac{1}{2}$ ounces of chocolate for a receipe. If she buys a 12 ounce package of chocolate, how many times would she be able to make the receipe?
7. How many pieces of metal, each $2\frac{2}{3}$ inches long, can be cut from a pipe 16 inches long?
8. If $3\frac{1}{3}$ truckloads of gravel cost $660, how much would one truckload cost?
9. How many $\frac{8}{9}$ are there in 72?
10. How many cages can be made from a piece of wire 21 yards long if each cage requires $3\frac{3}{7}$ yards of wire?

OBJECTIVE: To compare fractional values to decimal values and decimal values to fractional values

EXAMPLES: .7, one place = $\frac{7}{10}$

.42. two places = $\frac{42}{100} = \frac{21}{50}$

.564, three places = $\frac{564}{1000} = \frac{141}{250}$

Note: Remember to always reduce fractions to lowest terms.

PART I

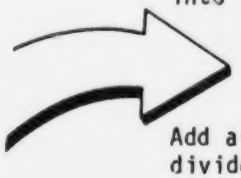
DIRECTIONS: Convert each of the following decimal values to fractions and reduce when necessary.

1) .2 =	2) .65 =	3) .6 =
4) .10 =	5) .350 =	6) .46 =
7) .81 =	8) .900 =	9) .575 =
10) .105 =	11) .4 =	12) .7 =
13) .300 =	14) .52 =	15) .35 =
16) .3 =	17) .20 =	18) .600 =
19) .800 =	20) .500 =	21) .30 =
22) .72 =	23) .5 =	24) .8 =
25) .246 =	26) .488 =	27) .690 =
28) .400 =	29) .92 =	30) .24 =

PART II

EXAMPLE 1: Change $\frac{3}{10}$ to a decimal.

To change a fraction to a decimal divide the denominator (10) into the numerator (3);



$$10 \overline{)\,3.0} \quad .3$$
$$\underline{3\ 0}$$

Add as many zeros as needed after the decimal point in the dividend.

EXAMPLE 2: Change $\frac{1}{3}$ to a decimal.

Divide the denominator (3) into the numerator (1);

$$3 \overline{)\,1.0\ 0} \quad .3\ 3\ \tfrac{1}{3}$$
$$\underline{9}$$
$$1\ 0$$
$$\underline{9}$$
$$1 = \tfrac{1}{3} \text{ remainder}$$

Note: Some denominators will never divide evenly into their numerators. After carrying out the answer to two places (hundredths), form a fractional remainder as you would in long division.

DIRECTIONS: Convert each of the following fractional values to decimal values.

1. $\frac{5}{6}$ =
2. $\frac{9}{10}$ =
3. $\frac{11}{20}$ =
4. $\frac{1}{2}$ =
5. $\frac{2}{3}$ =
6. $\frac{1}{5}$ =
7. $\frac{16}{36}$ =
8. $\frac{7}{10}$ =
9. $\frac{8}{15}$ =
10. $\frac{1}{4}$ =
11. $\frac{10}{100}$ =
12. $\frac{7}{8}$ =
13. $\frac{522}{2000}$ =
14. $\frac{125}{500}$ =
15. $\frac{25}{75}$ =

OBJECTIVE: To compare fractional values to decimal values and decimal values to fractional values

DIRECTIONS: Write in the corresponding column the appropriate equivalent for each given fraction or decimal.

FRACTION	DECIMAL		DECIMAL	FRACTION
Ex. $\frac{2}{5}$	.4		.08	$\frac{2}{25}$
1) $\frac{3}{4}$			13) .01	
2) $\frac{1}{6}$			14) .15	
3) $\frac{9}{10}$			15) .004	
4) $\frac{2}{5}$			16) .9	
5) $\frac{3}{8}$			17) .75	
6) $\frac{2}{3}$			18) .45	
7) $\frac{6}{12}$			19) .6	
8) $\frac{2}{7}$			20) .33 $\frac{1}{3}$	
9) $\frac{3}{20}$			21) .66 $\frac{2}{3}$	
10) $\frac{3}{40}$			22) .83 $\frac{1}{3}$	
11) $\frac{5}{9}$			23) .025	
12) $\frac{5}{2}$			24) 4.4	

OBJECTIVE: To solve addition and subtraction problems containing both fractional and decimal values

Before subtracting or adding problems containing both fractions and decimals, the numbers must be put in the same form. Either the decimals must be changed to fractions or the fractions must be changed to decimals.

Given the problem $.8 - \frac{3}{5} = ?$, either .8 must be changed to a fraction or $\frac{3}{5}$ must be changed to a decimal in order to put the numbers in the same form.

This problem could be done by either of the following processes.

FIRST PROCESS: Step 1: To change a fraction to a decimal, divide the denominator into the numerator:

$$\frac{3}{5} = 5\overline{)3.0}\quad \begin{array}{r} .6 \\ \underline{3.0} \end{array}$$

Step 2: Subtract decimal from decimal:

$$.8 - .6 = .2$$

SECOND PROCESS: Step 1: To change a decimal to a fraction, write 8 as the numerator. Count the decimal place .8 as one place which is tenths. Write 10 as the denominator. Then reduce the fraction

$$\frac{8}{10} = \frac{4}{5}$$

Step 2: Subtract fraction from fraction:

$$\frac{4}{5} - \frac{3}{5} = \frac{1}{5}$$

Note that $\frac{1}{5}$ written as a decimal equals .2

DIRECTIONS: Add or subtract the following problems; reduce if possible. Show your work on another sheet of paper.

1) $.2 + \frac{1}{5} =$

2) $\frac{7}{8} - .625 =$

3) $3\frac{5}{6} - .83\frac{1}{3} =$

4) $3.26 + 5\frac{7}{8} =$

5) $\frac{3}{4} - .25 =$

6) $\frac{4}{7} + .9 =$

7) $.8 - \frac{7}{10} =$

8) $\frac{8}{16} + .75 =$

9) $\frac{7}{9} - .66\frac{2}{3} =$

10) $.5 - \frac{1}{4} =$

11) $\frac{\dot{11}}{12} + 1.6 =$

12) $.88\frac{1}{3} + \frac{2}{3} =$

13) $.04 + \frac{3}{50} =$

14) $.00008 - \frac{3}{100000} =$

15) $3\frac{3}{5} + .55 =$

16) $6.5 - 4\frac{1}{4} =$

17) $45.75 + 2\frac{2}{5} =$

18) $1\frac{1}{2} - .025 =$

19) $201.7 - \frac{3}{4} =$

20) $\frac{6}{9} + .33\frac{1}{3} =$

OBJECTIVE: To solve word problems containing both fractional and decimal values with addition and subtraction

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PART I

EXAMPLE: Joseph has a job working 15 hours a week. On Monday he worked 5.5 hours, on Wednesday $4\frac{3}{4}$ hours, and on Friday $3\frac{1}{2}$ hours. Does he need to work any more this week?

Step 1: Change 5.5 to a fraction by taking .5 and using it as the numerator.

Step 2: .5 is in the tenths place so 10 is used as the denominator. The decimal 5.5 is now written as $5\frac{5}{10}$ which is reduced to $5\frac{1}{2}$.

Step 3: Add all of the fractions together.

$$5\frac{1}{2} = 5\frac{2}{4}$$

$$4\frac{3}{4} = 4\frac{3}{4}$$

$$+\ 3\frac{1}{2} = 3\frac{2}{4}$$

$$12\frac{7}{4} = 13\frac{3}{4} \text{ hours}$$

Answer: Yes, he needs to work more hours.

DIRECTIONS: Solve the following problems.

1. A blueprint calls for three pieces of piping measuring 10.8 inches, $6\frac{1}{2}$ inches, and $4\frac{4}{5}$ inches. How much piping is needed altogether?
2. In March Sybil weighed 187.25 pounds. In May she weighed $164\frac{3}{4}$ pounds. How much weight did Sybil lose from March to May?
3. Mary Lee travels $9\frac{3}{9}$ miles to work. Darlene travels 5.5 miles. How much farther does Mary Lee travel than Darlene?
4. In 1960 DuPont Aluminum Company manufactured 72.8 tons of aluminum. In 1970 it manufactured $81\frac{1}{3}$ tons. How much more aluminum did DuPont manufacture in 1970?
5. Mr. St. John painted his living room in 2.25 hours, his dining room in 1.75 hours, his bathroom in .5 hours, and his bedroom in $2\frac{3}{4}$ hours. How long did it take Mr. St. John to paint these rooms?
6. Ernestine made $53.40 babysitting. She spent $\frac{1}{2}$ of the money on a pair of jeans. How much money does she have left?
7. Janice had $189.20 in her checking account. She wrote a check for $\frac{3}{4}$ of this amount. How much does she have remaining in her account?
8. Paula purchased a pair of shoes for the regular price of $32.98. Then she bought a second pair for $\frac{1}{2}$ the regular price. How much did she pay for both pairs of shoes?
9. Diana has a room which has $120\frac{1}{16}$ square feet of floor space. If she puts down a decorator rug 98.25 square feet, how much of the floor will remain uncovered?
10. Marti brought four bags of aluminum cans to be recycled. One bag weighed 4.75 pounds, another $3\frac{1}{2}$ pounds, another 4.35 pounds, and the fourth bag weighed $4\frac{1}{4}$ pounds. How many pounds of cans had Marti brought to the recycling station?

PART II

DIRECTIONS: Read the chart below carefully. Then solve the word problems which follow.

A buyer of perfume, cologne and after shave in a large, downtown department store made the following chart to compare brands, sizes and prices of various products.

PERFUME PRICE CHART

PRICE	OUNCES	BRAND
$19.00	$3\frac{3}{8}$	Amore Cologne
	3.5	Victory Cologne Spray
	5.2	Velvet Cologne
	$5\frac{1}{8}$	Silver Satin Cologne
$13.50	4.25	Amore After Shave
	3.5	Victory Cologne
	$6\frac{1}{2}$	Velvet After Shave
	$2\frac{3}{8}$	Silver Satin Cologne Spray
$12.00	2.5	Amore Cologne
	$3\frac{1}{2}$	Victory After Shave
	3.3	Velvet Cologne
	$5\frac{1}{8}$	Silver Satin After Shave
$ 7.00	2.5	Amore After Shave
	$1\frac{3}{4}$	Victory Cologne
	3.3	Velvet After Shave
	$1\frac{5}{8}$	Silver Satin Cologne

1. How much more Silver Satin Cologne can be bought for $19.00 than Victory Cologne Spray?

2. Does the customer get more Amore Cologne for $19.00 than Victory Cologne? What is the difference in amount between the two?

3. How much more Amore Cologne does the customer get for $19.00 than for $12.00?

4. A customer bought a $12.00 bottle of Victory After Shave, a $7.00 bottle of Velvet After Shave, a $7.00 bottle of Amore After Shave and a $12.00 bottle of Silver Satin After Shave for Christmas presents for relatives. How many ounces of After Shave did she buy?

5. How many more ounces of Velvet After Shave can a customer get for $13.50 than $7.00?

6. A customer bought both a $19.00 bottle of Amore Cologne and a $12.00 bottle. How many ounces of cologne did she buy?

7. How many more ounces of Velvet After Shave can a customer buy for $13.50 than Amore After Shave?

8. Does the customer get more Silver Satin Cologne for $19.00 than Velvet Cologne? What is the difference in the amount between the two?

9. A customer bought a bottle of Victory Cologne Spray for $19.00 and a purse-size bottle of Victory Cologne for $7.00. If she already had a 3.5 ounce bottle at home, how many ounces of Victory Cologne would she have now?

10. A man bought a $13.50 bottle of Velvet After Shave during a special introductory sale and got a $7.00 bottle free. How many ounces of after shave did he have?

11. How much more Victory Cologne does a customer get for $13.50 than Silver Satin Cologne Spray?

12. How much more Victory Cologne comes in the $13.50 bottle than in the $7.00 bottle?

13. In the $12.00 range, is cologne more expensive than after shave? (Compare the number of ounces in after shave brands with ounces in cologne brands.)

14. How much more Amore After Shave can be bought for $13.50 than Silver Satin Cologne Spray?

15. How much more Velvet After Shave can be bought for $7.00 than Silver Satin Cologne?

OBJECTIVE: To solve multiplication problems containing both fractional and decimal values

Remember that all numbers in any problem must be in the same terms. Change them to either all fractions or all decimals and then proceed as usual.

DIRECTIONS: Solve each of the following problems.

1) $\frac{4}{5} \times .83\frac{1}{2} =$

2) $1\frac{2}{5} \times .4 =$

3) $2\frac{2}{9} \times .6 =$

4) $\frac{6}{7} \times .75 =$

5) $.10 \times \frac{2}{3} =$

6) $1\frac{3}{7} \times 2.8 =$

7) $\frac{5}{6} \times .08 =$

8) $\frac{4}{9} \times 2.625 =$

9) $4.8 \times \frac{5}{8} =$

10) $.25 \times \frac{7}{10} =$

11) $4.5 \times 1\frac{1}{3} =$

12) $\frac{7}{12} \times .10 =$

13) $4\frac{2}{9} \times 6.75 =$

14) $.49 \times \frac{5}{14} =$

15) $5\frac{1}{2} \times 8.075 =$

16) $354.6 \times 2\frac{3}{4} =$

17) $64\frac{2}{3} \times .33\frac{1}{3} =$

18) $25.2005 \times 2\frac{2}{5} =$

OBJECTIVE: To solve division problems containing both fractional and decimal values

All numbers in any problem must be in the same terms. Change them to either all fractions or all decimals.

EXAMPLE: $451.5 \div 75\frac{1}{4} =$

$451.5 \div 75.25 = 6$

DIRECTIONS: Solve each of the following problems.

1) $3\frac{3}{4} \div .03 =$

2) $2\frac{3}{4} \div 2.5 =$

3) $\frac{1}{2} \div 4.375 =$

4) $\frac{7}{16} \div .10 =$

5) $.7 \div \frac{7}{8} =$

6) $2.4 \div 3\frac{1}{2} =$

7) $3\frac{2}{5} \div .7 =$

8) $6\frac{1}{2} \div 9.75 =$

9) $\frac{9}{20} \div .03 =$

10) $4\frac{1}{6} \div 6.85 =$

11) $.15 \div \frac{3}{4} =$

12) $\frac{20}{27} \div .010 =$

13) $.20 \div \frac{1}{4} =$

14) $1\frac{1}{3} \div .12 =$

15) $3\frac{1}{6} \div 5.25 =$

16) $\frac{4}{6} \div 8.2 =$

17) $1.57 \div \frac{2}{8} =$

18) $\frac{1}{12} \div 1.50 =$

OBJECTIVE: To review all concepts in 701 - 803

PART I

DIRECTIONS: Circle the correct answer.

1) Reduce $\frac{8}{10}$

a. $\frac{4}{5}$ b. $\frac{1}{2}$ c. $\frac{2}{5}$ d. $\frac{1}{5}$

2) Reduce $\frac{21}{42}$

a. $\frac{7}{6}$ b. $\frac{3}{6}$ c. $\frac{3}{7}$ d. $\frac{1}{2}$

3) Reduce $\frac{72}{81}$

a. $\frac{72}{81}$ b. $\frac{7}{9}$ c. $\frac{9}{9}$ d. $\frac{8}{9}$

4) Reduce $\frac{125}{200}$

a. $\frac{5}{8}$ b. $\frac{5}{10}$ c. $\frac{1}{2}$ d. $\frac{25}{40}$

5) Rename $\frac{7}{9}$ to $\frac{?}{36}$

a. 21 b. 28 c. 32 d. 4

6) Rename $\frac{2}{9} = \frac{?}{81}$

a. 18 b. 14 c. 9 d. 36

7. Rename $\frac{5}{7}$ to $\frac{?}{56}$

a. 77 b. 20 c. 35 d. 40

8. Rename $\frac{1}{4}$ to $\frac{?}{32}$

a. 9 b. 8 c. 16 d. 64

9. Change $\frac{39}{9}$ to a mixed number

a. $4\frac{1}{2}$ b. b. $4\frac{1}{3}$ c. $4\frac{3}{9}$ d. $3\frac{1}{2}$

10. Change $\frac{26}{18}$ to a mixed number

a. $1\frac{4}{9}$ b. $2\frac{8}{18}$ c. 2 d. $1\frac{1}{18}$

MATH REVIEW CONTINUED:

11. Change $5\frac{2}{5}$ to an improper fraction.

a. $\frac{12}{5}$ b. $\frac{25}{5}$ c. $\frac{27}{5}$ d. $\frac{22}{5}$

12. Change $10\frac{7}{12}$ to an improper fraction.

a. $\frac{120}{12}$ b. $\frac{109}{12}$ c. $\frac{127}{12}$ d. $\frac{12}{127}$

13. $3\frac{1}{3} + 2\frac{2}{3} =$

a. 6 b. $6\frac{1}{3}$ c. $5\frac{3}{3}$ d. $5\frac{2}{3}$

14. Add: $5\frac{3}{5}$, $7\frac{1}{15}$, and 5

a. $16\frac{1}{2}$ b. $17\frac{10}{15}$ c. $17\frac{1}{2}$ d. $17\frac{2}{3}$

15. Add: $23\frac{3}{7} + 5\frac{6}{21}$

a. $28\frac{5}{7}$ b. $28\frac{15}{21}$ c. $28\frac{3}{7}$ d. $29\frac{3}{7}$

16. $2\frac{1}{8} + 10\frac{5}{8} + 6\frac{7}{8} + \frac{5}{8} =$

a. $20\frac{1}{4}$ b. $20\frac{2}{8}$ c. $18\frac{18}{8}$ d. $19\frac{1}{4}$

17. $126 + 67\frac{5}{8}$

a. $183\frac{5}{8}$ b. $192\frac{3}{8}$ c. $193\frac{5}{8}$ d. $183\frac{3}{8}$

18. $12\frac{6}{9} + 4$

a. $16\frac{6}{9}$ b. $8\frac{6}{9}$ c. $16\frac{2}{3}$ d. $8\frac{2}{3}$

19. $5\frac{1}{4} + 10\frac{3}{6}$

a. $15\frac{18}{24}$ b. $15\frac{3}{4}$ c. $15\frac{9}{12}$ d. $15\frac{2}{5}$

MATH REVIEW CONTINUED:

20. Find the sum of: $4\frac{3}{5}$, $7\frac{2}{6}$, and $3\frac{6}{15}$.

a. $14\frac{40}{30}$ b. $15\frac{10}{30}$ c. $15\frac{1}{5}$ d. $15\frac{1}{3}$

21. Subtract $3\frac{4}{5} - 1\frac{3}{5}$.

a. $2\frac{2}{5}$ b. $2\frac{1}{5}$ c. $4\frac{7}{5}$ d. $5\frac{2}{5}$

22. Subtract: $8\frac{7}{9} - 6\frac{4}{9}$.

a. $14\frac{1}{3}$ b. $2\frac{3}{9}$ c. $2\frac{1}{3}$ d. $2\frac{1}{2}$

23. Find the difference between: $10\frac{4}{5} - 7\frac{2}{3}$

a. $3\frac{2}{15}$ b. $3\frac{7}{15}$ c. $17\frac{22}{15}$ d. $18\frac{7}{15}$

24. $8\frac{2}{10} - 3\frac{1}{4} =$

a. $4\frac{9}{20}$ b. $4\frac{3}{5}$ c. $4\frac{19}{20}$ d. $5\frac{3}{5}$

25. Take $8\frac{3}{4}$ from $15\frac{1}{2}$.

a. $24\frac{1}{4}$ b. $6\frac{3}{4}$ c. $6\frac{1}{2}$ d. $7\frac{3}{4}$

26. How much greater than $5\frac{3}{4}$ is $8\frac{3}{9}$?

a. $2\frac{21}{36}$ b. $3\frac{1}{12}$ c. $14\frac{1}{12}$ d. $2\frac{7}{12}$

27. Take $9\frac{3}{4}$ from $13\frac{2}{3}$.

a. $4\frac{11}{12}$ b. $21\frac{11}{12}$ c. $4\frac{1}{12}$ d. $3\frac{11}{12}$

28. Multiply: $\frac{7}{8} \times \frac{4}{5}$.

a. $\frac{2}{5}$ b. $\frac{7}{10}$ c. $\frac{28}{40}$ c. $\frac{4}{10}$

MATH REVIEW CONTINUED:

29. Find the product of $\frac{2}{4} \times \frac{1}{16} \times \frac{4}{8}$

a. 64 b. $\frac{1}{64}$ c. $\frac{1}{32}$ d. $\frac{1}{16}$

30. $5 \times \frac{1}{4} =$

a. $\frac{5}{4}$ b. $1\frac{1}{4}$ c. $\frac{1}{20}$ d. 20

31. Multiply: $\frac{7}{8} \times 48 =$

a. $\frac{1}{42}$ b. $\frac{336}{8}$ c. $\frac{1}{21}$ d. 42

32. $8\frac{4}{5} \times \frac{10}{11} =$

a. 6 b. $\frac{80}{11}$ c. 8 d. $\frac{1}{6}$

33. Find the product of $3\frac{1}{3} \times 6\frac{5}{9}$

a. $21\frac{23}{27}$ b. $\frac{1}{21}$ c. $\frac{63}{10}$ d. $6\frac{3}{10}$

34. Multiply: $4\frac{4}{16} \times 5\frac{6}{8} =$

a. $24\frac{7}{16}$ b. $24\frac{14}{32}$ c. $\frac{391}{16}$ d. $\frac{782}{32}$

35. $2\frac{1}{4} \times \frac{3}{6} \times 3\frac{3}{9} =$

a. 5 b. $\frac{810}{162}$ c. $1\frac{5}{32}$ d. $3\frac{3}{4}$

36. Multiply: $6\frac{2}{4} \times 2\frac{2}{3} \times 8\frac{1}{2} =$

a. $147\frac{1}{3}$ b. $18\frac{2}{3}$ c. $180\frac{2}{3}$ d. 189

MATH REVIEW CONTINUED:

37. Divide: $\frac{1}{3} \div \frac{2}{3} =$

a. $\frac{3}{6}$ b. $\frac{2}{9}$ c. $\frac{1}{2}$ d. 2

38. $\frac{4}{5} \div \frac{36}{45} =$

a. $\frac{9}{9}$ b. 1 c. $\frac{1}{1}$ d. 9

39. $8 \div \frac{16}{17} =$

a. $8\frac{1}{2}$ b. $\frac{17}{2}$ c. $\frac{2}{17}$ d. 8

40. Divide: $\frac{9}{11} \div 3 =$

a. $3\frac{2}{3}$ b. $\frac{9}{33}$ c. $\frac{3}{11}$ d. $\frac{11}{3}$

41. Find the quotient: $3\frac{2}{6} \div \frac{12}{18} =$

a. $\frac{3}{15}$ b. $\frac{1}{5}$ c. 5 d. 3

42. $\frac{15}{42} \div 5\frac{5}{6} =$

a. $\frac{3}{49}$ b. $16\frac{1}{3}$ c. $\frac{49}{3}$ d. $1\frac{34}{36}$

43. $28\frac{3}{8} + 42.05 =$

a. 69.91 b. 70.17 c. $70\frac{17}{40}$ d. $69\frac{13}{80}$

44. Subtract: $13.75 - 11\frac{1}{4} =$

a. $2\frac{1}{4}$ b. 3.25 c. $3\frac{1}{2}$ d. 2.5

MATH REVIEW CONTINUED:

45. Find the sum of .125 + .35 + $\frac{3}{8}$ =

a. .655 b. $\frac{5}{6}$ c. .85 d. $\frac{3}{24}$

46. Take $4\frac{5}{6}$ from 5.25 =

a. $\frac{5}{12}$ b. 1.2 c. 14 d. $\frac{3}{4}$

47. Which is least in value?

a. $\frac{1}{2}$ b. $\frac{1}{3}$ c. $\frac{4}{5}$ d. $\frac{3}{4}$

48. Which is greatest in value?

a. $\frac{1}{2}$ b. $\frac{1}{3}$ c. $\frac{4}{5}$ d. $\frac{3}{4}$

49. Which is greatest in value?

a. .225 b. .229 c. .22 d. .2259

50. During the season one relief pitcher on a National League Team pitched $64\frac{1}{3}$ innings. Another relief pitcher pitched $115\frac{2}{3}$ innings and a third pitched $56\frac{1}{3}$ innings. How many innings did the three reliefers pitch?

a. $236\frac{1}{3}$ innings b. 235 innings c. $237\frac{2}{3}$ innings d. 236 innings

51. Which is least in value?

a. .225 b. .229 c. .22 d. .2259

52. At 11:00 the temperature was 86 degrees. By noon it had risen 5.1 degrees. Later that afternoon a storm center moved in and the temperature suddenly started dropping. By 5:00 it had dropped $9\frac{3}{10}$ degrees. What was the temperature at 5:00?

a. 91.1 degrees b. $82\frac{3}{10}$ degrees c. 81.8 degrees d. 86.1 degrees

MATH REVIEW CONTINUED

53. Two-fifths of the Robinson family income goes for food. One-fourth goes for rent, and one-fifth goes for laundry and cleaning. How much of the family income goes for food, rent and cleaning combined?

a. $\frac{4}{5}$ b. .85 c. $\frac{9}{10}$ d. .95

54. A woman invested $4000 in a new business which later had to fold. Luckily, after selling off the assets of the business, she had only lost $\frac{3}{20}$ of her money. How much money had she lost?

a. $1000 b. $800 c. $400 d. $600

55. Ramon worked the following number of hours during a five-day week: $7\frac{1}{2}$, 7.4, $6\frac{1}{4}$, $7\frac{3}{4}$, and 8.3. What is the total number of hours Ramon worked?

a. 37.2 hrs. b. $39\frac{1}{2}$ hrs. c. 38.4 hrs. d. 40 hrs.

56. Monroe bought his wife 1 ounce of her favorite perfume. If the perfume costs $10.50 for a quarter ounce, how much did Monroe spend?

a. $21.00 b. $40.50 c. $30.50 d. $42.00

57. Two joggers were racing each other to a destination 6.45 miles away. One jogger got $\frac{2}{3}$ of the way then quit. How far had he run?

a. $4\frac{3}{20}$ miles b. 5 miles c. $3\frac{2}{3}$ miles d. $4\frac{3}{10}$ miles

58. Esther had $2\frac{5}{6}$ yards of material left after making a dress. If the original length of material was 6.5 yards, how much material was used to make the dress?

a. $4\frac{1}{6}$ yards b. $3\frac{2}{3}$ yards c. 3.1 yards d. 4 yards

59. Erica and her sister bought several kinds of candy and nuts for a party they were having. Their packages were all marked differently: 2.75 lbs., $\frac{1}{2}$ lb., 1.5 lbs., 4 ounces, 8 ounces and 1.25 lb. How many pounds of candy and nuts did they buy (1 lb. = 16 ounces)?

a. $6\frac{3}{4}$ lbs. b. 5 lbs. c. $3\frac{1}{2}$ lbs. d. $4\frac{1}{4}$ lbs.

MATH REVIEW CONTINUED:

60. A recipe calls for $\frac{3}{8}$ lb. of butter. If the recipe is doubled, how much butter will be needed?

a. $\frac{7}{8}$ lb. b. $\frac{1}{2}$ lb. c. $\frac{3}{4}$ lb. d. 1 lb.

61. Three-fourths of the math test was multiplication and division of fractions. One-sixth was addition and subtraction of fractions. What part of the test was left for changing fractions into decimals?

a. $\frac{1}{6}$ b. $\frac{11}{12}$ c. $\frac{1}{3}$ d. $\frac{1}{12}$

62. A car which has a gas tank that can hold $14\frac{1}{2}$ gallons also has a mileage rating of 28 m.p.g. How far can the car go on a full tank?

a. $200\frac{1}{2}$ miles b. 406 miles c. $350\frac{1}{2}$ miles d. 500 miles

63. Interest rates rose $\frac{1}{8}$ point, $\frac{1}{2}$ point, $\frac{3}{4}$ point, $\frac{3}{8}$ point and $1\frac{1}{2}$ points over the last six months. How many points did they actually go up?

a. $3\frac{1}{4}$ points b. 5 points c. $1\frac{1}{8}$ points d. $2\frac{3}{4}$ points

64. By the time the collection plate was passed to Mrs. Rose, it had on it 3 half dollars, 5 quarters, 2 $1.00 bills and $\frac{4}{5}$ of a dollar in dimes and nickels. What was the total amount of money on the plate?

a. $5.25 b. $5.00 c. $5.55 d. $6.50

65. Sam Chen traveled $12\frac{2}{3}$ miles to Alconda and then drove $8\frac{1}{2}$ miles from Alconda to Pittsfield. How far did Sam travel?

a. $21\frac{1}{6}$ miles b. $20\frac{1}{3}$ miles c. 21 miles d. $21\frac{2}{3}$ miles

66. The Neighborhood Club bought $16\frac{2}{3}$ yards of fencing to enclose a community garden. If $11\frac{5}{12}$ yards were actually used, how much was left?

a. $5\frac{2}{3}$ yards b. 5 yards c. $4\frac{5}{12}$ yards d. $5\frac{1}{4}$ yards

67. An oil tanker holding 25,000 gallons of oil was rammed by a freighter causing an oil spill. In the oil spill $\frac{2}{5}$ of the total number of gallons were lost. How many gallons were lost?

a. 5,000 gals. b. 10,000 gals. c. 15,000 gals. d. 11,500 gals.

MATH REVIEW CONTINUED:

68. Mrs. Caruso wanted to take her three children on the bus to the museum. The regular adult fare is $.80 but each child can ride for $\frac{1}{2}$ fare. How much will Mrs. Caruso have to pay in bus fare to get to the museum?

a. $2.00 b. $1.80 c. $2.20 d. $2.80

69. A board $8\frac{1}{2}$ feet long is cut into four equal parts. Find the length of each part.

a. $2\frac{1}{2}$ feet b. $2\frac{1}{8}$ feet c. $2\frac{3}{4}$ feet d. $2\frac{1}{4}$ feet

70. All Day Grocery was selling pork chops for $1.60 a pound. How much would a package of center cut pork chops weighing $2\frac{2}{5}$ pounds cost?

a. $3.50 b. $3.80 c. $2.90 d. $3.84

71. The United States imported $3\frac{1}{4}$ billion gallons of oil in the first week of June, 1982, 4.1 billion gallons the second week, 3.8 billion the third week, and $4\frac{1}{10}$ billion the fourth week. What was the total amount of oil imported during June of 1982?

a. 15.9 billion b. 16.2 billion c. $15\frac{1}{4}$ billion d. 16 billion

72. Blue Cross/Blue Shield paid for $\frac{4}{5}$ of Myra's medical bills. If her bills were $1500, $300 and $450, how much did Blue Cross/Blue Shield pay?

a. $1,800 b. $1,440 c. $1,560 d. $2,000

73. Ron had a piece of shelving $\frac{2}{3}$ yard long. Phil told him he needed a piece .6 yard long. How many inches must Ron cut off his piece for Phil?

a. .4 yard b. $\frac{1}{15}$ yard c. $\frac{I}{10}$ yard d. $\frac{1}{3}$ yard

74. A special round-trip air fare to San Diego was $250. Mr. Piedmont sent his three children $\frac{1}{2}$ fare to San Diego to visit their grandmother. How much did he spend?

a. $400 b. $750 c. $500 d. $375

MATH REVIEW CONTINUED:

75. A beer distributor had $15\frac{1}{3}$ six packs left of a particular brand of beer. He sold the whole lot for a flat price of $46.00. Approximately how much did his customer pay for each six pack?

a. $2.50 b. $3.50 c. $2.90 d. $3.00

PART II MIXED PROBLEMS

DIRECTIONS: Solve the following problems.

1. $95\frac{26}{45} + 17\frac{14}{45}$

2. $10\frac{4}{16} + 8\frac{3}{8} + 5\frac{3}{4}$

3. $9\frac{3}{15} - 7\frac{4}{5}$

4. $89\frac{6}{14} - 12\frac{10}{14}$

5. $\frac{10}{18} \times \frac{24}{28} =$

6. $12\frac{2}{3} \times \frac{6}{8} =$

7. $5\frac{14}{18} \times 2\frac{9}{21} =$

8. $\frac{24}{36} \div \frac{40}{48} =$

9. $12 \div \frac{96}{130} =$

10. $4\frac{4}{6} \div 7\frac{2}{3} =$

MATH REVIEW CONTINUED

PART III

Directions: Read the story below. Then do the problems which follow.

THE NUTTY PARTY

Joanna Rollins walked through the door of Lonnie Jo's Candy Emporium and took a number. Her next door neighbor's daughter, Lorraine, waved from behind the counter.

"Hi, Mrs. Rollins, how are you doing? I'll be right with you as soon as I box these chocolates," said the young woman.

"Don't rush on my account, Lorraine. I'm trying to decide what I'm going to get for my party."

"Is that the party you're giving for your daughter and new son-in-law?"

"That's the one. You're coming aren't you? It's going to be in the recreation room on the top floor of my apartment building. I had to reserve that room because once I started inviting people it got to be a rather large party," said Mrs. Rollins as she shook her head.

"Okay, I'm ready for you now. What will it be?"

"Let's see now, about two and three-fourths pounds of blanched peanuts and three and one-half pounds of cashews. Oh yes, you better give me three pounds of mixed nuts as well.

"I've got three and one-eighth pounds of mixed nuts on the scale. Will that be all right?"

"Yes, now that's two and three-fourths pounds of peanuts at $3.95 a pound. Cashews run $4.95 a pound, and mixed nuts are $6.25 a pound, right?"

"That's right. Will there be anything else?"

"Yes, I would like three-fourths pound of after-dinner mints. They're $3.29 a pound aren't they? And $5.00 worth of those special jelly beans."

"Okay, that will be $2\frac{1}{2}$ pounds of jelly beans. "It seems like we'll be snacking all through the evening at your party!"

"Well, I like my guests to be well-fed."

DIRECTIONS: Work each of the following problems by referring to the story you just read. Round off numbers where necessary.

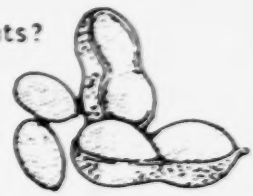
1. How many pounds of peanuts, cashews and mixed nuts did Mrs. Rollins buy all together?

2. How much did she pay for $2\frac{3}{4}$ pounds of peanuts?

3. How much did she pay for $3\frac{1}{2}$ pounds of cashews?

4. How much did she pay for $3\frac{1}{8}$ pounds of mixed nuts?

5. How many more pounds of mixed nuts did she buy than peanuts?



MATH REVIEW CONTINUED

6. What was the total cost of all three kinds of nuts combined?

7. If Mrs. Rollins received 2 $\frac{1}{2}$ pounds of jelly beans for $5.00, how much would one pound cost?

8. How many pounds of mints and jelly beans did Mrs. Rollins buy all together?

9. How much did she pay for the after-dinner mints?

10. What was the total cost of the two kinds of candy combined?

11. How much more did she spend on nuts than on candy?

12. What was the total cost of all the candy and nuts combined?

13. Tax can be figured by multiplying the combined cost of the candy and nuts by .07. How much tax did Mrs. Rollins pay on her bill?

14. What was the total amount of money Mrs. Rollins paid at the candy store? (include tax)

15. Mrs. Rollins paid the cashier with three twenty dollar bills. How much change did she receive?